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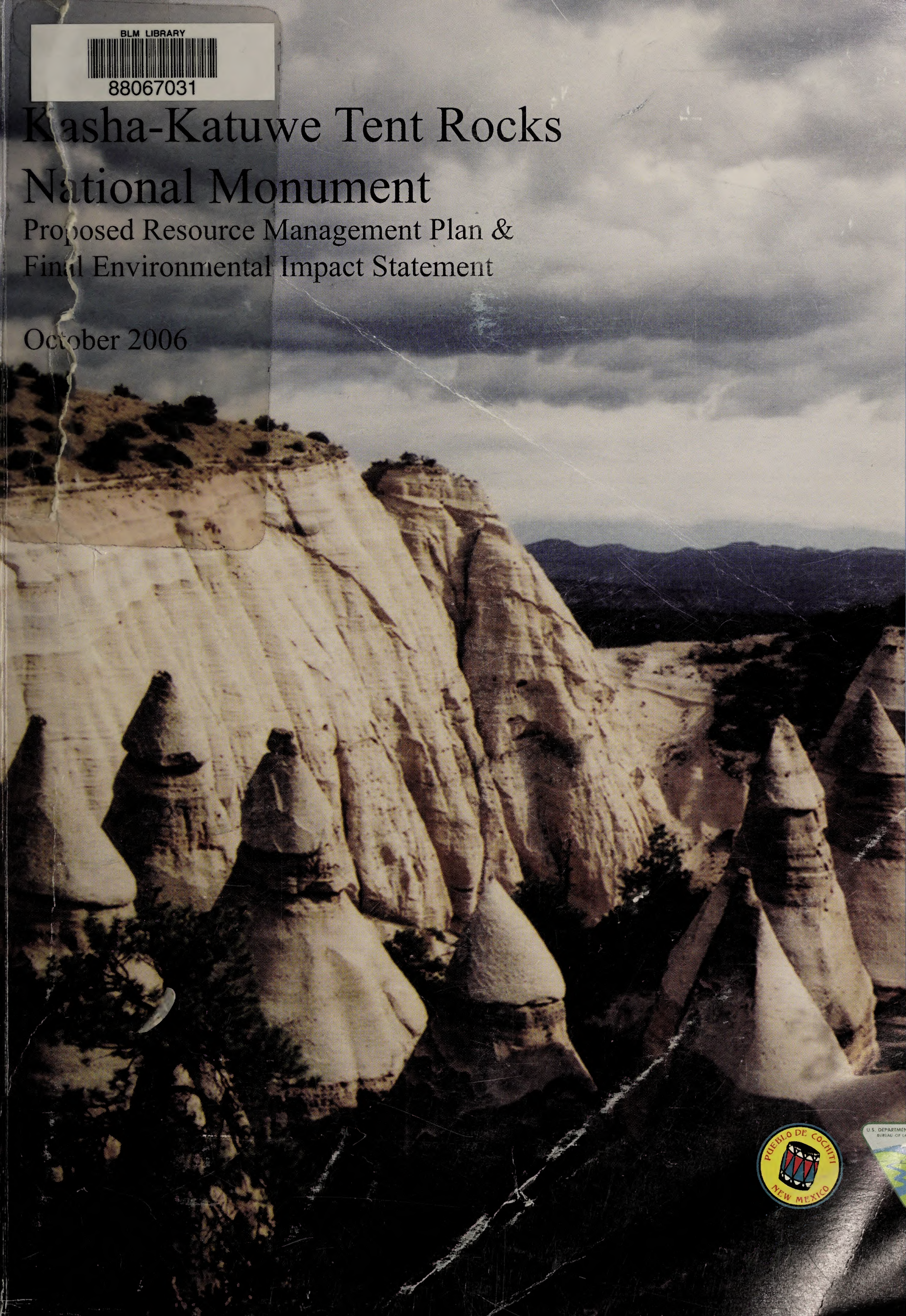
Kasha-Katuwe Tent Rocks National Monument

Proposed Resource Management Plan & Final Environmental Impact Statement

October 2006



BLM

Albuquerque District, Rio Puerco Field Office New Mexico

Pueblo de Cochiti New Mexico

U.S. Department of the Interior Bureau of Land Management

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of the public lands for the use and enjoyment of
present and future generations.

BLM/NM/PL-06-13-1220

United States Department of the Interior

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Santa Fe, New Mexico 87502-0155
www.nm.blm.gov

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October 2006

Dear Reader:

Enclosed for your review is the Proposed Resource Management Plan (Proposed RMP) and Final Environmental Impact Statement (Final EIS) for the Kasha-Katuwe Tent Rocks National Monument. The Proposed RMP was prepared by the Bureau of Land Management (BLM) in consultation with the Pueblo de Cochiti, federal and state agencies, taking into account public comments received during this planning effort. This document provides a framework for the future management direction and appropriate use of the Monument and Planning Area, located in Sandoval County, New Mexico. The document contains both land use planning decisions and implementation decisions to facilitate management of the Planning Area. The Proposed RMP is open for a 30-day review and protest period beginning on the date the Environmental Protection Agency publishes its Notice of Availability for the RMP/EIS in the *Federal Register.*

This Proposed RMP/Final EIS has been developed in accordance with the National Environmental Policy Act of 1969 (NEPA), and the Federal Land Policy and Management Act of 1976. The document is largely based on Alternative B, the agency's preferred alternative in the Draft RMP/EIS, which was released on November 4, 2005. This current document contains the proposed plan, including changes made between the Draft RMP/EIS and Proposed RMP/Final EIS, predictable impacts of the proposed plan, the comments received during the public review period of the Draft RMP/EIS, and responses to these comments.

Any person who participated in the planning process for this Proposed RMP, and who has an interest that is or may be adversely affected, may protest approval of this plan and the land use planning decisions contained within it during this 30-day period (refer to Title 43, Code of Federal Regulations, Part 1610.5-2). Only those persons or organizations who participated in the planning process leading to the Proposed RMP may protest. The protesting party may raise only those issues submitted for the record during the planning process leading up to the publication of this current document. These issues may have been raised by the protesting party or others. New issues may not be brought into the record at the protest stage.

Protests must be filed with the BLM Director in writing at either of the following addresses.

Regular mail:
Director (210)
Attention—Brenda Williams
P.O. Box 66538
Washington, DC 20035

Overnight mail:
Director (210)
Attention—Brenda Williams
1620 L Street, NW, Suite 1075
Washington, DC 20036

E-mailed and telefaxed protests will not be accepted as valid protests unless the protesting party also provides the original letter by either regular or overnight mail, postmarked by the close of the protest period. Under these conditions, the BLM will consider the E-mail or faxed protest as an advance copy and it will receive full consideration. If you wish to provide BLM with such advance notification, please direct these advance copies as follows.

E-mail:	Faxes:
Brenda_Hudgens-Williams@blm.gov	(202) 452-5112 (Attn: BLM Protest Coordinator)

IMPORTANT: In accordance with 43 CFR 1610.5-2, the protest must contain the information described in the following critical element checklist.

☐ **The name, mailing address, and telephone number of the person filing the protest.**

☐ **The "interest" of the person filing the protest (how will you be adversely affected by the approval or amendment of the resource management plan?).**

☐ **A statement of the part(s) of the Proposed RMP and the issue(s) being protested. (To the extent possible, this should reference specific pages, paragraphs, sections, tables, or maps that are believed to be incorrect or incomplete.)**

☐ **A copy of all documents addressing the issue(s) that the protesting party submitted during the planning process OR a statement of the date they were discussed for the record.**

☐ **A concise statement explaining why the protestor believes the BLM State Director's proposed decision is incorrect.**

All of these elements are critical parts of your protest. Take care to document all relevant facts. As much as possible, reference or cite the planning documents or available planning records (e.g., meeting minutes or summaries, correspondence). To aid in ensuring the completeness of your protest, a protest checklist is available as Appendix K of this document.

The BLM Director will make every attempt to promptly render a decision on the protest. The decision will be in writing and will be sent to the protesting party by certified mail, return receipt requested. The decision of the BLM Director will be the final decision of the Department of the Interior.

The BLM's practice is to make protests, including the names and home addresses of respondents, available for public review. Individual respondents may request that we withhold their names and or home addresses, but if you wish us to consider withholding this information, you must state this prominently at the beginning of your comments. In addition, you must present a rationale for withholding this information. This rationale must demonstrate that disclosure "would constitute an unwarranted invasion of privacy." Unsupported assertions will not meet this burden. In the absence of exceptional, documentable circumstances, this information will be released. All submissions from organizations and businesses, and from individuals identifying themselves as representatives or officials of organizations and businesses, will be available for public inspection in their entirety.

Unlike land use planning decisions, implementation decisions are not subject to protest under planning regulations, but are subject to administrative remedies and review, primarily through appeals to the Office of Hearings and Appeals (Interior Board of Land Appeals). Implementation decisions generally constitute the BLM's final approval, allowing on-the-ground actions to proceed. Where implementation decisions are made as part of the land use planning process, they are still subject to the appeals process or other administrative review as prescribed by specific resource program regulations. When invoked, the appeals process/administrative review takes place after the BLM resolves the protests to the land use planning decisions and makes a decision to adopt or amend the RMP.

These administrative remedies for final implementation decisions usually take the form of appeals to the Office of Hearings and Appeals, though for certain proposed or non-final implementation decisions, such as proposed grazing decisions, the regulations provide for an internal agency review (usually a protest to the Authorized Officer) that must be completed before the final implementation decision can be appealed to the Office of Hearing and Appeals. This type of protest to the Authorized Officer should not be confused with the protest of land use planning decisions to the BLM Director.

Upon resolution of any protests, an Approved Plan and Record of Decision (ROD) will be issued. The Approved Plan will be mailed to all who participated in the planning process and will be available to all parties through the "Planning" page of the BLM national website (http://www.blm.gov), or by mail upon request. The Approved RMP and ROD will include a description of the process for appealing the implementation decisions to the Office of Hearing and Appeals after document publication.

Sincerely,

Linda S. C. Rundell

Linda S. C. Rundell
Director, New Mexico State Office

KASHA-KATUWE TENT ROCKS NATIONAL MONUMENT
PROPOSED RESOURCE MANAGEMENT PLAN
AND FINAL ENVIRONMENTAL IMPACT STATEMENT

Draft ( ) Final (x)

Lead Agency: United States Department of the Interior, Bureau of Land Management

Type of Action: Administrative

ABSTRACT

This Proposed Resource Management Plan/Final Environmental Impact Statement (PRMP/FEIS) describes three alternatives for managing the public land resources of the Kasha-Katuwe Tent Rocks National Monument and Planning Area, Rio Puerco Field Office, New Mexico. The PRMP/FEIS (1) analyzes the probable impacts of each alternative, (2) recommends acquisition of privately owned contiguous lands (assuming willing sellers) with resource values similar to or compatible with monument resource values, and (3) prescribes management of inholdings (assuming acquisition). The alternatives are: (A) Continuation of Existing Management (No Action) Alternative, (B) Proposed Action (Agency Preferred) Alternative, and (C) Adaptive Management Alternative.

Protests of this PRMP/FEIS may be submitted according to BLM Planning Regulations (at Title 43, Code of Federal Regulations, Part 1610.5-2) by any person who has participated in the planning process and has an interest that is or may be adversely affected. Protests must be postmarked within 30 days following the date that the Environmental Protection Agency's Notice of Availability is published in the *Federal Register*.

Protests should be made in writing and mailed to one of the following addresses.

Regular Mail:
Director 210
Attention: Brenda Williams
P.O. Box 66538
Washington, D.C. 20035

Overnight Mail:
Director 210
Attention: Brenda Williams
1620 L Street NW, Suite 1075
Washington, D.C. 20036

RECOMMENDED:

Thomas E. Gow
Manager, Rio Puerco Field Office

CONCURRED:

Edwin J. Singleton
Manager, Albuquerque District

CONCURRED:

Cippy CrazyHorse
Governor, Pueblo de Cochiti

APPROVED:

Linda S.C. Rundell
Director, New Mexico State Office

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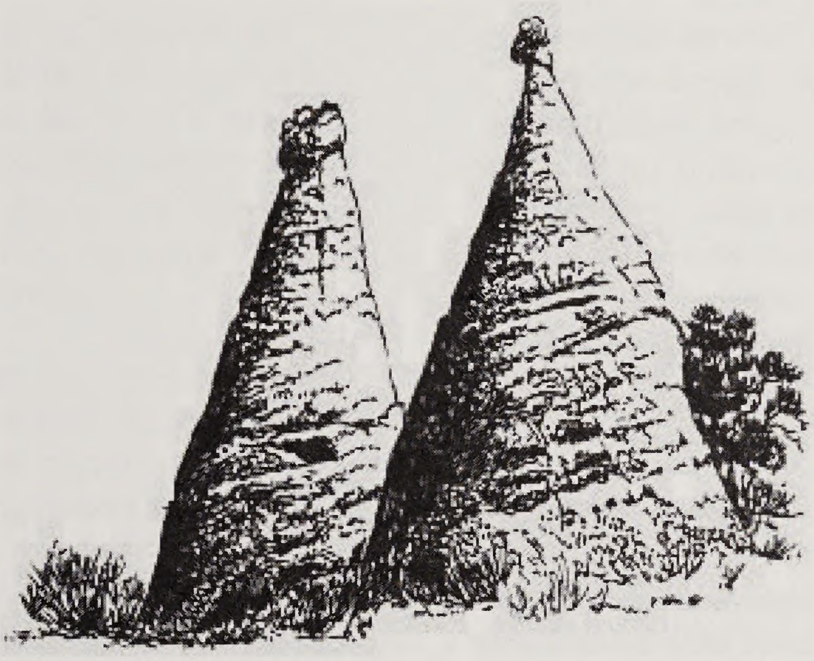
Kasha-Katuwe Tent Rocks
National Monument

Proposed Resource Management Plan & Final Environmental Impact Statement



October 2006

United States Department of the Interior
Bureau of Land Management
Albuquerque District
Rio Puerco Field Office

EXECUTIVE SUMMARY OF ALTERNATIVES AND ENVIRONMENTAL IMPACTS

Introduction

Located in north-central New Mexico in the foothills of the Jemez Mountains on the Pajarito Plateau, the Kasha-Katuwe Tent Rocks National Monument is in Sandoval County. It lies about 35 miles southwest of Santa Fe and 52 miles northeast of Albuquerque, New Mexico.

The Bureau of Land Management (BLM) has prepared this Proposed Resource Management Plan (RMP) and Final Environmental Impact Statement (EIS) to provide guidance for managing the federal lands and interests within the Monument and Planning Area. Within the monument boundary are approximately 5,402 acres. In this plan, the 5,402-acre area is also referred to as the "Monument." The Monument is composed of approximately 4,124 acres of public federal lands, 521 acres of land owned by the State of New Mexico, and 757 acres in private surface ownership.

Adjoining the Monument are two parcels of land that have resource values similar to those of the Monument. To the southwest is a recently acquired BLM parcel containing approximately 965 acres, referred to in this document as the "Southwest Acquisition." Along the northern monument boundary is a private parcel known locally as the Cañada de Cochiti Grant (or Young Ranch) but referred to in this document as the "North Edgeholding," which contains approximately 9,268 acres. The combined area, which is referred to in this document as the "Planning Area," includes approximately 15,635 acres.

Background

The Monument was designated by Presidential Proclamation 7394 on January 17, 2001. Before its designation as a national monument, the same area was designated by the BLM as an Area of Critical Environmental Concern (ACEC) through the *Rio Puerco Resource Management Plan* (USDI, BLM 1986; maintained and reprinted 1992) to protect its special geologic formations, scenic and cultural values. Management was guided by the 1986 RMP, as amended, and the *Final Protection Plan for Tent Rocks, An Area of Critical Environmental Concern* (USDI, BLM 1987).

The BLM initiated a management agreement with the Pueblo de Cochiti in 1997. In 2000 the BLM and the pueblo signed an Inter-Governmental Cooperative Agreement to provide for more consistent, effective and collaborative management of the Tent Rocks ACEC, now the Monument.

Since the designation of the Monument in 2001, the BLM has undertaken numerous projects (after consultation with the Pueblo de Cochiti) to improve visitor services, the health of the land, and road access through pueblo land and to the main parking/picnic area, as well as to reduce hazardous fuels. Many of the visitor service facilities, such as restrooms, tables and shelters, were purchased and installed with revenues collected at the Tent Rocks fee site, where 100 percent of the fees are returned to the agency for site management, improvement and operation.

Purpose and Need

Presidential Proclamation 7394 designated the Kasha-Katuwe Tent Rocks National Monument to protect geologic, cultural, and biological objects of interest and to provide an opportunity to observe, study, and experience the special geologic processes displayed in the area. The proclamation requires the BLM to prepare a management plan for the Monument, which is a unit of the BLM National Landscape Conservation System (NLCS). Under the BLM's current planning policy, the agency must prepare a Resource Management Plan for the Monument that is separate from any other plan (a "stand-alone plan"). Policy further requires that the RMP be accompanied by an Environmental Impact Statement (EIS), as mandated by the National Environmental Policy Act (NEPA). The EIS discloses to the public and BLM managers any impacts to the environment that would likely result from implementing the agency's Proposed Action or alternatives. The decisions made through this planning process will apply only to (1) federal lands administered by the BLM within the

Monument and Southwest Acquisition, and (2) nonfederal lands within the Planning Area identified for acquisition, if and when they are acquired. Those nonfederal lands within the present monument boundary would, upon acquisition, become part of the Monument. To add other acquired lands to the Monument would require Congressional legislation.

Issues

In the BLM planning process, an "issue" is defined as a matter of controversy, conflict or general concern about resource management activities, the environment or land uses. In essence, issues help in determining what decisions need to be made in the plan and what the environmental analysis must address. Because Proclamation 7394 sets limits on how the Monument is to be managed, and the area is small compared to most other units within the NLCS, conflicts among resource uses that need to be resolved are not evident. Based on internal input and the public scoping comments received, five major planning issues were identified that were considered in the development of alternatives.

Issue 1—**Land tenure adjustments** and how land ownership will be incorporated into the management plan for the Monument.

Issue 2—How **access and transportation** will be managed in the Monument.

Issue 3—How **recreational activities** and visitor use will be managed.

Issue 4—How **ecosystem restoration** will benefit the public and the Monument.

Issue 5—How **American Indian uses and traditional cultural practices** will be incorporated into the management of the Monument.

Management Alternatives

The BLM land use planning regulations and NEPA require the agency to develop a range of reasonable alternatives during the planning process. Through public scoping meetings and guidance from the proclamation, consultation with the Pueblo de Cochiti and internal input from BLM specialists, three alternatives, including a "no action" alternative, were developed and analyzed for their potential environmental impacts. The three alternatives describe various ways the provisions of the proclamation would be applied to direct management of the Monument and Planning Area. Each of the three alternatives presented in this document has a different blend or balance of resource allocations, uses and protection. Each alternative has a somewhat different emphasis, primarily defined in terms of resource focus, but all afford the high degree of protection required by the proclamation for the Monument's resources and objects of interest. A summary of actions proposed under each of the following alternatives, together with the resulting impacts, can be found in Table ES-1 at the end of this summary.

Alternative A

Alternative A is the No Action Alternative, representing the continuation of the existing BLM management measures (plans, policies, and decisions) that are in compliance with the proclamation. These measures have been established in the Rio Puerco RMP (as amended) and implemented through the Tent Rocks ACEC Protection Plan. Alternative A also serves as the baseline for comparison with the other two alternatives.

Alternative B—Proposed Action (Agency Preferred Alternative)

Alternative B represents the agency's proposed resource use and conservation alternative. The BLM's focus would be to make resource allocations that would resolve the resource use issues and management concerns associated with the Monument and Planning Area, while complying with the proclamation and current BLM policies, initiatives and guidance.

Alternative C

Alternative C emphasizes an adaptive management approach (particularly for recreation management) with the inclusion of additional monitoring. Of the three alternatives, this one represents the highest accommodation of visitor access to and within the Monument and has the highest potential for facility development. The goals of the monitoring and evaluation program would be to provide the basis for long-term adaptive management changes and ongoing planning. The monitoring results would trigger management changes to maximize recreational use, facility development, and the visitors' beneficial experiences while minimizing natural resource degradation and depletion.

Proclamation Management Requirements (All Alternatives)

Specific language in the proclamation establishes some conditions that apply to management of the Monument regardless of which alternative (or combination of alternatives) the BLM chooses. These conditions include the following.

- All federal land and interest in lands within the boundaries of the Monument are withdrawn from all forms of entry, location, selections, sale, leasing or other disposition under the public land laws. This withdrawal applies under (but is not limited to) the mining laws and all laws relating to mineral and geothermal leasing. The only exception to this withdrawal would be an exchange that would further the protective purposes of the Monument.
- The use of all motorized and mechanized vehicles off road is prohibited, except for emergency or authorized administrative purposes.
- Lands and interests in lands within the Monument not owned by the United States are reserved as a part of the Monument if title to them is acquired by the United States.
- The BLM will manage the Monument in close cooperation with the Pueblo de Cochiti.
- The management plan for the Monument will include appropriate transportation planning that addresses the actions, including road closures or travel restrictions, needed to protect the geologic, cultural, and biological objects of interest identified in the proclamation and to further the purposes of the American Indian Religious Freedom Act of August 11, 1978 (Title 42, U.S. Code, Section 1996).
- The Secretary of the Interior will discontinue livestock use on the federal portion of the grazing allotments within the Monument, under applicable laws, unless livestock grazing will advance the purposes of the proclamation.
- Nothing in the proclamation enlarges or diminishes the jurisdiction of the State of New Mexico over fish and wildlife management.
- The Monument is subject to valid existing rights.
- The proclamation did not reserve water as a matter of federal law. However, any water use or rights reserved or appropriated by the United States on or before the date of the proclamation are not reduced or relinquished. The Secretary of the Interior will work with appropriate state authorities to ensure that any water resources needed for monument purposes are available.
- Nothing in the proclamation revokes any existing withdrawal, reservation, or appropriation; however, the Monument is the dominant reservation.
- No person may use, injure, destroy, or remove any feature of this Monument without authorization, nor locate nor settle upon any of its lands.

Management Guidance Common to All Alternatives

Some existing actions, decisions, and guidelines under which the ACEC has been managed have effectively met public needs and/or resolved issues, so the BLM will continue to use them in the Monument. These are brought forward from the *Rio Puerco Resource Management Plan* (USDI, BLM 1986; maintained and reprinted 1992) and the *Final Protection Plan for Tent Rocks, An Area of Critical Environmental Concern* (USDI, BLM 1987) and are described below. Other resource or program management guidance that will be used under any alternative also is included in this section.

Access and Transportation

Roads will be closed if not needed for visitor use, safety or administrative purposes. BLM staff will determine restoration measures such as stabilization and reseeding to prevent soil erosion. Such "Best Management Practices" for minimizing sediment pollution will be developed and implemented on a site-specific basis.

Air Quality

All BLM actions and use authorizations will be designed and stipulated to protect air quality within the Monument (including any acquired lands or lands managed under Cooperative Management Agreements) and the nearby National Park Service Class I area, Bandelier National Monument.

American Indian Uses and Traditional Cultural Practices

The BLM will continue close coordination with the Pueblo de Cochiti in the day-to-day operations of the Monument. For actions requiring an Environmental Assessment (EA) and/or EIS under NEPA, the BLM will consult with Cochiti, Santo Domingo, Jemez, and Zia Pueblos, as well as any tribes that may come forward later to express concern about traditional cultural properties, places, and uses in the Monument and Planning Area. These tribes, plus the Jicarilla Apache Nation and the Hopi Tribe, will be included under any consultation required by the Native American Graves Protection and Repatriation Act.

Cultural Resources

Under any alternative selected, the BLM will comply with the National Historic Preservation Act through procedures described in the "Protocol Agreement Between New Mexico Bureau of Land Management and New Mexico State Historic Preservation Officer" (signed in June 2004) or any later agreements. The original agreement normally requires intensive archeological survey (BLM Class III inventory) of areas that would be directly affected by a project or action. If archeological resources are found, the preferred course of action is to redesign the project so that the remains are avoided. If this is not possible, the BLM will undertake data recovery or other measures developed in consultation with the New Mexico State Historic Preservation Officer to reduce adverse impacts.

Environmental Justice

The BLM must identify, inform and consult with minority and low-income groups about federal actions that may affect them, and should not disproportionately impact these groups in an adverse way. Minority and low-income people will likely be affected by actions in the Monument and Planning Area. Therefore, they are being consulted and kept informed.

Fire Management

The proposed actions and priorities in the *Albuquerque Field Office Fire Management Plan* (USDI, BLM 2004a) and the *Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas* (USDI, BLM 2004b) apply to the Monument and Planning Area.

Through proposed vegetation treatments, the BLM will focus on moving the landscape toward the desired future condition of Fire Regime Condition (FRC) Class 1. The priority for the Planning Area will be to treat areas that are in FRC Classes 2 and 3; at this time no areas are in FRC Class 1. Vegetation on private lands will be treated only if these lands are acquired from willing sellers or managed under Cooperative Management Agreements.

Hazardous Materials/Solid Waste

No hazardous material or solid waste sites are known to exist within the Planning Area. The BLM relies on routine fieldwork activities and non-BLM sources to discover and report spills or other releases of hazardous materials/solid wastes on public lands. The agency investigates reported sites, and plans needed containment and/or cleanup responses on a case-by-case basis. Sites that are reported will be handled under current regulations, with potentially responsible parties identified and pursued based on best available information.

Lands and Realty

The BLM's ACEC Protection Plan included discussions of Cooperative Agreements with nonfederal landowners who would provide land with uses complementary to the ACEC values. These values have now become monument values, and it is proposed that state and privately owned lands within and private lands adjoining the Monument be acquired wherever willing sellers are available.

Livestock Grazing

In accordance with Presidential Proclamation 7394, annual grazing use will be discontinued on federal land under the two federal grazing permits that exist within the Monument. Acreage closed to grazing will be fenced and range developments removed if they are not converted to another purpose (e.g., wildlife waters, recreational uses). Short-duration, nonrenewable grazing of forage on federal land within the Planning Area will be allowed if the BLM determines it will advance the purposes of the proclamation. If such use is allowed, it is expected that it will be focused on helping to attain specific vegetative and ecological objectives.

Noxious Weed Control

Monitoring for noxious or invasive weeds and a vigorous treatment program will be part of Planning Area management, in accordance with Standard Operating Procedures found in Instruction Memorandum NM-010-99-01 (displayed in Appendix B). Any Cooperative Management Agreement that is developed for inholdings or edgeholdings will also include provisions for weed monitoring and treatment.

Paleontology

Although no fossil resources have been documented within the Planning Area boundary, if they are found there, the BLM will locate, evaluate, manage and protect them. The agency has an assistance agreement with the New Mexico Museum of Natural History and Science. Under this agreement, anyone without a permit who finds vertebrate fossils on public land can bring them to the attention of the museum. This ensures the fossils will be available to the people of New Mexico and the United States. The BLM will handle any such discoveries on a case-by-case basis.

Recreational Uses

The BLM will continue to manage the Monument as a fee site. The agency will collect, retain, and reinvest collected fees at this site under the authority of the Federal Lands Recreation Enhancement Act of 2004 (P.L. 108-447.)

The Federal Land Policy and Management Act and the Land and Water Conservation Fund Act empower the BLM to issue Special Recreation Permits according to its own procedures and fee schedules for uses such as group activities, commercial recreational tours, and other special recreational uses. Issuing permits is mandatory for commercial and noncommercial recreation-related uses of BLM-administered federal lands. The BLM may also require permits for any uses in special areas such as the Monument where the agency determines that the law requires it.

Soils

Information on soil types will be used to properly locate facilities, as well as to establish visitor observation and interpretive opportunities.

Special-Status Plants

No special-status plant species is known to exist within the Monument or Southwest Acquisition. Any plants located will be managed on a case-by-case basis.

Threatened, Endangered and Sensitive Wildlife Species

The Endangered Species Act (ESA—P.L. 93-205), as amended (P.L. 100-478), requires special protection and management of federally listed threatened and endangered (T&E) species, species proposed to be listed as threatened or endangered, and designated and proposed critical habitat. The act also requires the development and implementation of recovery plans for the conservation and survival of T&E species.

Federal- and state-listed species are protected in the environmental assessment process (NEPA) by site-specific evaluations and clearances that must be done before any on-the-ground activities are begun. This allows the BLM to apply management prescriptions in areas that have been specifically designated to protect T&E species. When a new species is listed as threatened, endangered, or proposed for listing, all federal actions having the potential to affect habitat for that species are evaluated. Any action that "May Affect" federal species requires the BLM to enter into consultation with the U.S. Fish and Wildlife Service under Section 7 of the ESA.

Based on a Biological Evaluation, the BLM has determined that the continued implementation of program actions identified within this plan will result in a "No Affect" determination for all listed, proposed, and candidate species. The Monument does not possess habitat required for any listed species.

Vegetation and Woodland Management

Where needed, vegetation and woodland treatments will consist of wildland fire use for resource benefit, prescribed burns, mechanical methods, physical removal of excess vegetation, and chemical methods. The BLM will follow agency Best Management Practices (BMPs) for vegetation treatment methods. Some treatments may be combined with others for the best results, and some areas may have to be treated repeatedly to achieve the desired results.

Visual Resources

Both the Federal Land Policy and Management Act and the National Environmental Policy Act require that federal lands be managed to protect the quality of the scenic values. The BLM will continue to carry out its basic stewardship responsibilities to identify and protect visual values on the federal lands within the Planning Area.

Water Resources

For those roads and trails to be closed, agency soil and water specialists will recommend Best Management Practices to be used to minimize watershed impacts and/or restore natural conditions. These specialists will also analyze water availability and quality for visitor use, acquire water rights (if needed), and ensure continued compliance with the Safe Drinking Water Act.

Wilderness or Wilderness Study Areas

None of these areas exists within or immediately adjacent to the Monument or Southwest Acquisition. However, the Santa Fe National Forest's Dome Wilderness and the National Park Service's Bandelier Wilderness adjoin the North Edgeholding, which is part of the Planning Area. None of these special areas is expected to affect the others' resource values.

Environmental Consequences

The potential environmental consequences of the alternatives are addressed for the various natural resources and land uses within the Monument and Southwest Acquisition and, to the extent they are known, in parts of the Planning Area. Table ES-1, which follows, provides a summary of the potential impacts from implementing any of the three alternatives considered. Chapter 4 contains detailed analysis of these impacts.

TABLE ES-1

COMPARISION OF ALTERNATIVES AND SUMMARY OF IMPACTS BY ISSUE

ISSUE/Element or Factor	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Issue 1—Land Tenure Adjustment			
Easement Acquisition	1.05 miles for access through the Monument (BLM Road 1011)	Same as Alternative A, except acquisition of inholdings would eliminate the need for this easement.	Same as Alternative B
Cooperative Management Agreements (CMAs)	Monument management on 1,278 acres of inholdings would be more effective with CMAs in place.	Replaced by acquisition from willing sellers.	Same as Alternative B
Land Acquisition			
Inholdings—surface acres 1,278; nonfederal mineral acres 837	Not applicable	Acquire for resource protection and effective monument management to: Reduce recreation visitor trespass Reduce potential for visual intrusions	Same as Alternative B
Edgeholdings—surface acres & nonfederal minerals acres 9,268	Not applicable		
Issue 2—Access & Transportation			
Visitor use (visitors/year)	150,000	50,000	50,000
Intensive recreation use (acres)	241	241	280
Roaded Natural Areas (acres)	1,987	1,987	2,895
Semi-Primitive Motorized (acres)	2,070	2,048	1,415
Semi-Primitive Non-Motorized (acres)	1,032	1,054	779
Roads "Open" (miles)	24.20	5.95	9.50
Roads with "Limited" use (miles)	1.05	7.80	5.75
Roads "Closed" (miles)	0.00	11.50	10.40
Trails "Open" (miles)	8.03	7.23	8.93
Trails "Closed" (miles)	0.40	1.90	0.40
ORV/OHV Area Designations (acres)			
Open	0	0	0
Closed	0	0	0
Limited*	4,124	4,124	4,124
	*(Limited to existing roads & trails)	*(Limited to designated roads & trails)	*(Limited to designated roads & trails)
Access to Highly Valued Traditional Use Area	Intrusion of 5.9 miles of improved road would cause loss of privacy.	Intrusion of unimproved road access would be reduced by an estimated 3 to 5 miles.	Intrusion of new access would create loss of privacy in highly valued traditional use area.
Trail Access	8.03 miles—would create the potential for damage & erosion to 167 acres of special geologic features.	7.23 miles—would create the potential for damage & erosion to 679 acres of special geologic features.	8.93 miles—would create the potential for damage & erosion to 679 acres of special geologic features.
Road Easement	1.05 miles—would be acquired for legal access through the Monument & Planning Area.	Same as Alternative A, except acquisition of inholdings would eliminate the need for this easement.	Same as Alternative B, except the east access road would require 1.4 miles of road easement outside the Monument but within the Planning Area.
Public Access (total road miles)	24.20	5.95	9.50
Limited Access (total road miles)	1.05	7.80	5.75
Motorized Access (acres)	4,057	4,035	4,310
Dispersed Use Access (acres)	1,032	1,054	779
Public Trails Access (miles)	8.03	7.23	8.93

TABLE ES-1

COMPARISION OF ALTERNATIVES AND SUMMARY OF IMPACTS BY ISSUE

ISSUE/Element or Factor	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Issue 2—Access & Transportation (concl'd) Watershed Stability & Water Quality (direct & indirect impacts)	25.25 miles of road	5.95 miles of road. Watershed stability & water quality would improve.	9.5 miles of road. Watershed stability & water quality would improve.
Wildlife Habitat Fragmentation (per square mile of federal land)	An average of approximately 3.04 miles of road & 1.01 miles of trails.	An average of approximately .75 miles of road & .91 miles of trails.	An average of approximately 1.14 miles of road & 1.12 miles of trails.
Issue 3—Recreational Activities Facility Improvement & Maintenance	5.9 miles of BLM Road 1011 through the Monument, w/241 acres of intensive use areas. The BLM would develop a means to make available a safe & dependable public water supply.	Same as Alternative A	Same as Alternative A, except the intensive use areas would be enlarged to 280 acres (total).
Recreational Visits	Privacy would decrease & intrusion on traditional use & resource degradation would increase as visitation moved toward 150,000 visitors/year.	Management would influence visitation to stabilize visitors at approximately 50,000/year to minimize intrusion & resource degradation.	Same as Alternative B
Cultural Resources (indirect impacts)	Illegal collection, cumulative & irreversible impacts may result in loss of sites.	Impacts described under Alternative A would be mitigated through use of inventory, documentation, & buffer areas, w/excavation limited	Same as Alternative B
Prescribed Fire (as a management tool)	Would have reduced effectiveness in the 241-acre intensive use area.	Would have reduced effectiveness in the 241-acre intensive use area.	Would have reduced effectiveness in the 280-acre intensive use area.
Unique Geologic Features	150,000 visitors/year would result in a high probability of damaging or destroying some special geologic features on 167 federal acres in the Monument.	50,000 visitors/year would reduce the probability of damage &/or destruction of special geologic features on lands within & adjoining the Monument. Long-term protection of geologic features would be provided by proper location of recreational signing & facilities.	Same as Alternative B Same as Alternative B
Visual Resources Management (VRM) VRM Class I acres	0	0	0
Class II acres	4,124	3,887*	3,138*
Class III acres	0	1,202*/**	1,951*/**
Class IV acres	0	0	0
		*Monument & Southwest Acquisition **w/less restrictive facility development compliance	*Monument & Southwest Acquisition **w/less restrictive facility development compliance
Water	Trampling of vegetation & development of social trails on 241 acres of intensive use areas would result in increased erosion & delivery of sedimentation to stream channels.	Trampling of vegetation & development of social trails on 241 acres of intensive use areas would result in increased erosion & delivery of sedimentation to stream channels.	Trampling of vegetation & development of social trails on 280 acres of intensive use areas would result in increased erosion & delivery of sedimentation to stream channels.

TABLE ES-1

COMPARISION OF ALTERNATIVES AND SUMMARY OF IMPACTS BY ISSUE

ISSUE/Element or Factor	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Issue 3—Recreational Activities (concl'd)			
Water (concl'd)	Drinking water that met supply & quality needs, health & safety requirements would be made available in/near the Monument.	Same as Alternative A	Same as Alternative A
Wildlife Habitat			
Visitor Numbers	Visitation could reach 150,000/year. Most direct impacts to wildlife would come from interaction with the visiting public.	Management would encourage visitation at about 50,000/year. Most direct impacts to wildlife would come from interaction with the visiting public.	Same as Alternative B
Fragmentation (per square mile of federal habitat)	Approximately 3.04 miles of road & 1.01 miles of trails	Approximately .75 miles of road & .91 miles of trails	Approximately 1.14 miles of road & 1.12 miles of trails
Vegetation & Woodland Management	The potential exists for indirect & long-term effects from noxious weed introduction.	Same as Alternative A	Same as Alternative A
	The 241 acres used for intensive recreation by as many as 150,000 visitors/year would have little opportunity to develop diverse, healthy vegetation.	The 241 acres used for intensive recreation by as many as 50,000 visitors/year would have little opportunity to develop diverse, healthy vegetation.	The 280 acres used for intensive recreation by as many as 50,000 visitors/year would have little opportunity to develop diverse, healthy vegetation.
Issue 4—Ecosystem Restoration			
Access & Transportation	Close 0.0 miles of road	Close 11.5 miles of road, rehabilitate by natural &/or mechanical means.	Close 10.4 miles of road, rehabilitate by natural &/or mechanical means.
	Close 0.4 miles of trail, rehabilitate by natural &/or mechanical means.	Close 1.9 miles of trail, rehabilitate by natural &/or mechanical means.	Same as Alternative A
Rangeland/Livestock Grazing	Discontinue grazing on 4,088 federal acres. This would help to return to a natural fire regime, reduce potential for catastrophic fire, improve watershed conditions, & improve ecologic diversity.	Same as Alternative A, except short-duration grazing could be permitted to advance the purposes of the proclamation.	Same as Alternative B
Vegetation & Woodland Treatment	934 acres of treatment would result in long-term vegetative health & diversity & improved watershed condition.	Same as Alternative A, except identified &/or recommended acquisition could increase the acres of treatment to as much as 2,236 acres.	Same as Alternative B
Riparian Areas	Exclosures & monitoring would lead to expansion of riparian habitat areas where possibility was demonstrated. Need for exclosures & monitoring would be reevaluated at the end of 5 years unless positive results were occurring.	Same as Alternative A, except identified & recommended acquisition could lead to expansion of the exclosures, monitoring & riparian habitat area.	Same as Alternative B

TABLE ES-1

COMPARISION OF ALTERNATIVES AND SUMMARY OF IMPACTS BY ISSUE

ISSUE/Element or Factor	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Issue 5—American Indian Uses & Traditional Cultural Practices			
Access & Transportation	Intrusion of many miles of road would result in loss of privacy in highly valued traditional use area.	Miles of road in traditional use area reduced by 3 to 5 miles.	Same as Alternative A
		Infrequent short-term closures could be requested on open roads & trails.	Same as Alternative B
		Affected tribes & pueblos would be consulted on access & transportation activities.	Same as Alternative B
	Intrusion of 5.9 miles of improved road would cause loss of privacy in highly valued traditional use area.	Same as Alternative A	Same as Alternative A
Traditional Use Concerns	Close day-to-day consultation with Pueblo de Cochiti.	Same as Alternative A	Same as Alternative A
	Consultation with other tribes as required for NEPA, NHPA, & NAGPRA.	Same as Alternative A	Same as Alternative A
Cultural Resources	Consultation with tribes as required for cultural resource compliance.	Same as Alternative A	Same as Alternative A
Environmental Justice	Pueblo de Cochiti involved in management through Cooperative Management Agreement; consultation with other tribes & pueblos.	Same as Alternative A	Same as Alternative A

TABLE OF CONTENTS

CHAPTER 1 – INTRODUCTION 1-1
BACKGROUND 1-1
PURPOSE OF AND NEED FOR ACTION 1-1
DESCRIPTION OF THE MONUMENT AND PLANNING AREA 1-2
Location and Acreage 1-2
Natural and Cultural Resources and Uses 1-4
PLANNING ISSUES 1-11
PLANNING CRITERIA AND LEGISLATIVE CONSTRAINTS 1-11
RELATIONSHIP OF THIS PLAN TO OTHER PLANS 1-12
Relationship to BLM Plans 1-12
Relationship to Other Agencies' Plans 1-13

CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES 2-1
INTRODUCTION 2-1
Contents of This Chapter 2-1
The BLM Planning/Environmental Assessment Process for the Monument and Planning Area 2-1
PROCLAMATION MANAGEMENT REQUIREMENTS (ALL ALTERNATIVES) 2-2
MANAGEMENT GUIDANCE COMMON TO ALL ALTERNATIVES 2-3
Access and Transportation 2-3
Air Quality 2-3
American Indian Uses and Traditional Cultural Practices 2-3
Cultural Resources 2-3
Environmental Justice 2-4
Fire Management 2-4
Hazardous Materials/Solid Waste 2-4
Lands and Realty 2-4
Livestock Grazing 2-5
Noxious Weed Control 2-5
Paleontology 2-5
Recreational Uses 2-6
Soil and Water Resources 2-6
Special-Status Plants 2-6
Threatened, Endangered and Sensitive Wildlife Species 2-7
Vegetation and Woodland Management 2-7
Visual Resources 2-8
Wilderness or Wilderness Study Areas 2-8
Wildlife 2-8
RESOURCE PROGRAM GOALS AND OBJECTIVES 2-9
Access and Transportation 2-9
American Indian Uses and Traditional Cultural Practices 2-9
Cultural Resources 2-9
Fire Management 2-10
Livestock Grazing 2-10
Paleontology 2-10
Public Land Health 2-10
Recreational Uses 2-10
Riparian Areas 2-11
Soil and Water Resources 2-11
Special Geologic Features 2-11
Vegetation 2-12
Visual Resources 2-12
Wildlife 2-12

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES 2-13
Alternative A 2-13
Alternative B—Proposed Action (Agency Preferred Alternative) 2-24
Alternative C 2-30
MONITORING OF THE KASHA-KATUWE TENT ROCKS NATIONAL MONUMENT AND SOUTHWEST ACQUISITION 2-33
RESOURCE MANAGEMENT PLAN-LEVEL DECISIONS (PROTESTABLE) 2-34
IMPLEMENTATION OR ACTIVITY-LEVEL DECISIONS (LIST NOT INCLUSIVE) 2-36
ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL 2-37
Leaving the Area as a Pristine and Peaceful Environment 2-37
Maximizing Recreational Use of the Monument 2-37
SUMMARY OF IMPACTS 2-37

CHAPTER 3 – AFFECTED ENVIRONMENT 3-1
INTRODUCTION 3-1
PLANNING AREA AND NATIONAL MONUMENT 3-1
Access and Transportation 3-1
American Indian Uses and Traditional Cultural Practices 3-2
Cultural Resources 3-2
Geology, Minerals and Paleontology 3-4
Lands and Realty 3-5
Livestock Grazing 3-7
Recreational Uses 3-9
Riparian Areas 3-13
Social and Economic Conditions 3-13
Soils 3-18
Threatened, Endangered & Sensitive Wildlife Species 3-18
Vegetation 3-21
Visual Resources 3-27
Water Resources 3-33
Wildlife 3-34
SOUTHWEST ACQUISITION 3-37
Introduction 3-37
Access and Transportation 3-39
American Indian Uses and Traditional Cultural Practices 3-39
Cultural Resources 3-39
Geology, Minerals and Paleontology 3-39
Lands and Realty 3-40
Livestock Grazing 3-40
Recreational Uses 3-40
Riparian Areas 3-41
Social and Economic Conditions 3-41
Soil and Water Resources 3-41
Threatened, Endangered & Sensitive Wildlife Species 3-41
Vegetation 3-42
Visual Resources 3-42
Wildlife 3-42

CHAPTER 4 – ENVIRONMENTAL IMPACTS 4-1
INTRODUCTION 4-1
GENERAL ASSUMPTIONS 4-2
ALTERNATIVE A 4-2
Access & Transportation 4-2
American Indian Uses & Traditional Cultural Practices 4-3
Cultural Resources 4-4
Fire Management/Ecosystem Restoration 4-6

Lands & Realty (Land Tenure Adjustment) 4-7
Livestock Grazing 4-7
Recreational Uses 4-7
Social & Economic Conditions 4-8
Soil & Water Resources 4-9
Special Geologic Features 4-10
Threatened, Endangered & Sensitive Wildlife Species 4-11
Vegetation & Woodland Management 4-12
Visual Resources 4-14
Wildlife Habitat 4-15
Cumulative Impacts under Alternative A 4-16
ALTERNATIVE B 4-18
Access & Transportation 4-18
American Indian Uses & Traditional Cultural Practices 4-19
Cultural Resources 4-20
Fire Management/Ecosystem Restoration 4-21
Lands & Realty (Land Tenure Adjustment) 4-22
Livestock Grazing 4-22
Recreational Uses 4-22
Social & Economic Conditions 4-23
Soil & Water Resources 4-23
Special Geologic Features 4-24
Threatened, Endangered & Sensitive Wildlife Species 4-24
Vegetation & Woodland Management 4-24
Visual Resources 4-25
Wildlife Habitat 4-25
Cumulative Impacts under Alternative B 4-26
ALTERNATIVE C 4-27
Access & Transportation 4-27
American Indian Uses & Traditional Cultural Practices 4-29
Cultural Resources 4-29
Fire Management/Ecosystem Restoration 4-30
Lands & Realty (Land Tenure Adjustment) 4-31
Livestock Grazing 4-31
Recreational Uses 4-31
Social & Economic Conditions 4-32
Soil & Water Resources 4-32
Special Geologic Features 4-32
Threatened, Endangered & Sensitive Wildlife Species 4-32
Vegetation & Woodland Management 4-33
Visual Resources 4-33
Wildlife Habitat 4-33
Cumulative Impacts under Alternative C 4-34

CHAPTER 5 – CONSULTATION AND COORDINATION 5-1
INTRODUCTION 5-1
TRIBAL CONSULTATION AND COORDINATION 5-1
CONSULTATION REGARDING WILDLIFE 5-2
CONSULTATION WITH OTHER COOPERATING ENTITIES 5-2
CONSISTENCY WITH OTHER PLANS 5-2
PUBLIC PARTICIPATION 5-2
PREPARERS OF THE PLAN 5-6
PUBLIC COMMENTS AND BLM RESPONSES 5-8

APPENDICES

Appendix A–Proclamation 7394 of January 17, 2001
Appendix B–Noxious Weed Prevention
Appendix C–Best Management Practices for Use with Vegetation Treatment Methods
Appendix D–Visual Resource Management Classes & Objectives
Appendix E–Recreation Opportunity Spectrum
Appendix F–Section 7 Correspondence with U.S. Fish & Wildlife Service
Appendix G–Special-Status & Sensitive Animal Species in Sandoval County
Appendix H–Plant Species of Concern in Sandoval County
Appendix I–Wild & Scenic River Evaluation for Kasha-Katuwe Tent Rocks National Monument
Appendix J–Vegetation treatments & Fire Management in the Kasha-Katuwe Tent Rocks National Monument & Planning Area
Appendix K–Resource Management Plan Protest Critical Item Checklist
Appendix A&A–Acronyms & Abbreviations

GLOSSARY

REFERENCES

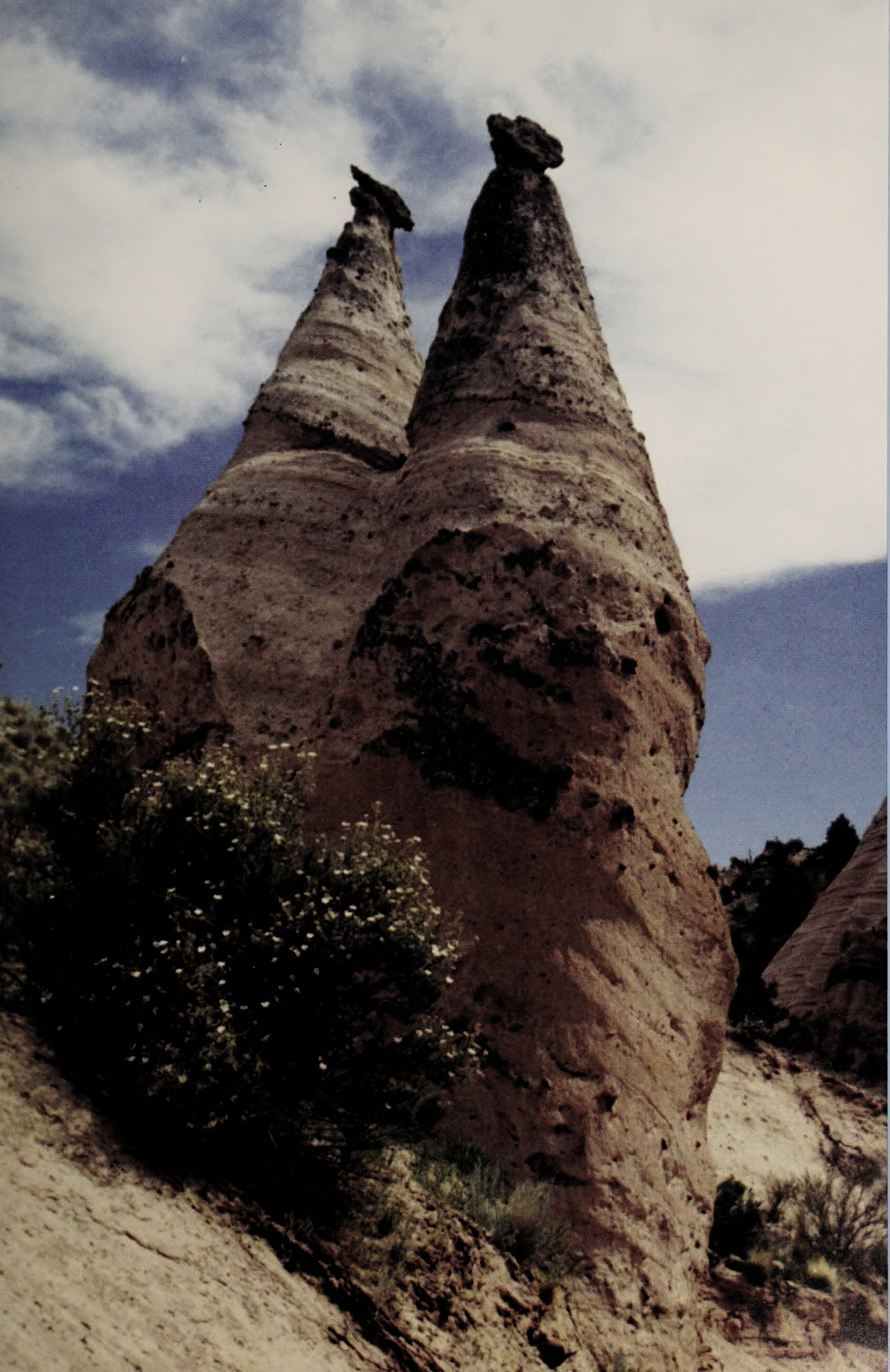
MAPS

Map 1 – Regional Map ... 1-5
Map 2 – Kasha-Katuwe Tent Rocks National Monument ... 1-7
Map 3 – Planning Area Acreages, (Includes Monument, Southwest Acquisition, N. Edgeholding) ... 1-9
Map 4 – Soil Map Units (SMUs) ... Map Section
Map 5 – Areas with Special Geologic Features ... Map Section
Map 6 – Roads and Trails Under Alt. A` ... Map Pocket in back of book
Map 7 – Roads and Trails Under Alt. B ... Map Pocket in back of book
Map 8 – Roads and Trails Under Alt. C. ... Map Pocket in back of book
Map 9 – Potential Hazardous Fuel (Vegetative) Treatment Areas Under Alt. A (Monument and Southwest Acquisition) ... Map Section
Map 10 – Livestock Grazing Allotments in the Monument and Southwest Acquisition ... Map Section
Map 11 – ROS (Recreation Opportunity Spectrum) Classifications, Alt. A ... Map Section
Map 12 – Peralta Canyon Riparian Study Area ... Map Section
Map 13 – Potential Hazardous Fuel (Vegetative) Treatment Areas Under Alt. B&C ... Map Section
Map 14 – ROS (Recreation Opportunity Spectrum) Classifications, Alt. B ... Map Section
Map 15 – VRM (Visual Resource Management) Classifications, Alt. B ... Map Section
Map 16 – ROS (Recreation Opportunity Spectrum) Clasifications, Alt. C ... Map Section
Map 17 – VRM (Visual Resource Management) Classifications, Alt. C ... Map Section

TABLES

Table ES-1, Alternative Comparison and Summary of Impacts by Issue ... ES-9
Table 1-1, Acres in the Monument and Planning Area ... 1-3
Table 2-1, Soils in the Monument & Southwest Acquisition – Acreage by Landscape Location and Land Ownership ... 2-8
Table 2-2, Status of Road Segments in the Monument Under the Alternatives ... 2-15
Table 2-3, Status of Road Segments in the Southwest Acquisition Under the Alternatives ... 2-16
Table 2-4, Status of Trail Segments in the Monument and Southwest Acquisition under the Alternatives ... 2-17
Table 2-5, Existing Fire Regime Condition Classes within the Planning Area (acres) ... 2-18
Table 2-6, Elements of Recreational Use in the Planning Area Under the Alternatives ... 2-19
Table 2-7, Recreation Opportunity Spectrum Classifications for the Monument and Southwest Acquisition Under the Alternatives ... 2-21
Table 2-8, Acres in the Planning Area Accessible for Woodland and Vegetative Treatments ... 2-23
Table 2-9, Alternative Comparison and Summary of Impacts by Issue ... 2-38
Table 3-1, Legal Description of Lands in the Kasha-Katuwe Tent Rocks National Monument (New Mexico Principal Meridian) ... 3-7

Table 3-2, Livestock Grazing Permitted in the National Monument ... 3-8
Table 3-3, Trend in User Numbers for Kasha-Katuwe Tent Rocks ACEC/National Monument, 1998-2004 ... 3-11
Table 3-4, Fees Collected at National Monument, Fiscal Years 1998-2004, with Funds Contributed for BLM Facility Developed & Operations by the Pueblo de Cochiti ... 3-12
Table 3-5, 2000 Census information for Populations near the Monument ... 3-15
Table 3-6, Population & Economic Information, 2000 ... 3-16
Table 3-7, Employment by Industry ... 3-17
Table 3-8, Income by Type (in millions of Year 2000 dollars) ... 3-18
Table 9, Soils in the Kasha-Katuwe Tent Rocks National Monument ... 3-19
Table 3-10, Federally Listed Threatened, Endangered and Candidate Wildlife Species that May Occur in Sandoval County ... 3-22
Table 3-11, Sensitive Wildlife Species with Potential to Occur in the Monument ... 3-23
Table 3-12, Average Precipitation at Cochiti Dam, 1975-2004 (inches) ... 3-33
Table 3-13, Numbers of Wildlife Species Found in the Monument by Habitat Type ... 3-36
Table 3-14, Neotropical Migratory Birds Potentially Occurring in the Planning Area ... 3-38
Table 4-1, Resources and Uses Potentially Impacted by the Proposed Action and Alternatives ... 4-2
Table 4-2, Impacts to American Indian Uses & Traditional Cultural Practices under the Alternatives ... 4-4
Table 4-3, Determinations of Affect under the Endangered Species Act (ESA) for Threatened, Endangered, and Candidate Wildlife Species in Sandoval County, New Mexico ... 4-11
Table 4-4, Visual Resource Management Classes for Federal Acreage in the Monument and Southwest Acquisition, by Alternative (acres) ... 4-13
Table 5-1, Groups & Agencies Provided a Copy of the Draft RMP/EIS or Notified of its Availability ... 5-3
Table 5-2, Preparers of the Plan ... 5-7



Chapter 1

CHAPTER 1

INTRODUCTION

BACKGROUND

The Kasha-Katuwe Tent Rocks National Monument was officially designated on January 17, 2001, by Presidential Proclamation 7394. Section 2 of the Antiquities Act of 1906 (Title 34 U.S. Statutes, Section 225; Title 16 U.S. Code, Chapter 431) authorizes the President, at his or her discretion, to declare national monuments by public proclamation. These are usually historic landmarks, historical and prehistoric structures, and other objects of historical and scientific interest that exist on lands owned and controlled by the U.S. Government.

Before this area was made a national monument, the Bureau of Land Management (BLM) had administratively designated it as an Area of Critical Environmental Concern (ACEC) through the *Rio Puerco Resource Management Plan* (RMP—1986, maintained and reprinted 1992). An ACEC requires special management attention to protect and prevent irreparable damage to important historical, cultural, or scenic values; fish and wildlife resources; or other natural systems or processes on the public lands. The Tent Rocks ACEC was designated to protect the volcanic formations that give the area its name. Comparable formations are found only in surrounding areas of New Mexico and in Turkey.

Management emphasis for this area has been on interpreting its geologic and scenic values while allowing semi-primitive, non-motorized recreation. Since the area was designated as an ACEC, BLM protective measures, management actions, and cooperation with the Pueblo de Cochiti [under Cooperative Management Agreements (in 1997 and 2000) and Resolutions (in 2004)] have helped to preserve it for use and enjoyment by the public and educational institutions. Through the *Protection Plan for Tent Rocks ACEC* (1987), the BLM developed management prescriptions to maintain the geologic, scenic, recreational, and natural components of the ACEC, which has now been established as a national monument.

PURPOSE OF AND NEED FOR ACTION

Presidential Proclamation 7394 established the Kasha-Katuwe Tent Rocks National Monument to protect cultural and biological objects of interest and to provide an opportunity for visitors to observe, study, and experience the special geologic processes found in the area. The proclamation requires that the BLM prepare a management plan for this monument, which is a unit of the agency's National Landscape Conservation System. Another requirement is that the BLM work closely with the Pueblo de Cochiti to implement the purposes of the proclamation.

Under the BLM's current planning policy, the agency must prepare a Resource Management Plan (RMP) for the Monument that is separate from any other plan (a "stand-alone plan"). Policy further requires that the RMP be accompanied by an Environmental Impact Statement (EIS) as mandated by the National Environmental Policy Act of 1969 (NEPA). The EIS discloses to the public and BLM managers any impacts to the environment that would likely result from implementing the agency's Proposed Action or possible alternatives. The decisions made through this planning process will apply only to (1) federal lands administered by the BLM within the Monument; (2) inholdings identified in the proclamation for acquisition, if and when they are acquired; (3) the Southwest Acquisition, recently acquired; and (4) the North Edgeholding, should it be acquired.

DESCRIPTION OF THE MONUMENT AND PLANNING AREA

Location and Acreage

Located in north-central New Mexico in the foothills of the Jemez Mountains on the southwest edge of the Pajarito Plateau, the Kasha-Katuwe Tent Rocks National Monument is in Sandoval County about 5 miles west of the Rio Grande. It lies about 35 miles southwest of Santa Fe and 52 miles northeast of Albuquerque (refer to Maps 1 and 2). Access to the area from these cities is by State Road (SR) 22 or SR 16 from Interstate Highway 25 (I-25), then by Tribal Route 92 (TR 92) which connects to BLM Road 1011 (also referred to locally as Forest Service Road 266). Adjacent to the Monument are the Pueblo de Cochiti on the east and south; Santo Domingo Pueblo, Jemez Pueblo and the Santa Fe National Forest on the west; and private lands to the north. The Monument is located within New Mexico's Congressional District 3.

The Pueblo de Cochiti serves as the gateway community to the Monument. Tribal officials and members work with the BLM to manage and maintain the site to ensure visitor safety and enjoyment, resource protection, and preservation of the tranquility and traditions of the pueblo.

Within the monument boundary are approximately 5,402 acres. The BLM manages 4,124 federal surface acres and 4,565 acres of minerals, the State of New Mexico owns approximately 521 acres (surface and minerals), and the balance of monument acreage (approximately 757 surface acres and 316 acres of minerals) is privately owned (refer to Table 1-1 and Map 3 below).

Proclamation 7394 reserved nonfederal property ownerships (surface and mineral inholdings) within the monument boundaries to become part of the Monument if they could be acquired. These properties have resources similar to those the Monument was designated to protect. In preparing the Draft Resource Management Plan/Environmental Impact Statement (Draft RMP/EIS), the BLM Planning Team recognized that these resources extend onto privately owned edgeholdings adjoining the north and southwest boundaries of the Monument. The team recommended these edgeholdings for acquisition and management, similar to and in conjunction with the Monument. Congressional legislation would be required to make the edgeholdings a part of the Monument.

Two events occurred during preparation of the Draft RMP/EIS that have resulted in a change in the terminology used in this Proposed RMP/Final EIS. One event was that the BLM acquired the parcel of land referred to as the "Southwest Edgeholding," so land use planning decisions made in this document can be implemented within this area. The second event was the issuance of an updated BLM Land Use Planning Handbook (H-1610-1). This new handbook provides that the agency's land use planning can include decisions that will apply to lands desirable for acquisition when they are acquired. (Note: The BLM's acquisitions are based on finding willing sellers.)

As the result of these two events, the names used to identify land areas in this Proposed RMP/Final EIS are different than those used in the Draft RMP/EIS. The **Monument**, as described above, includes approximately 5,402 acres. Land use decisions on the federally owned portion will be applicable and can be implemented on completion of this plan. Decisions will also be made and can be implemented on the 965-acre, now federally owned **"Southwest Acquisition"** (refer to Map 3). The privately owned Cañada de Cochiti Grant or **"North Edgeholding"** [9,268 acres of surface and minerals other than gold, silver, and quicksilver (mercury)] is part of the **Planning Area** (15,635 acres), as are the Monument and the Southwest Acquisition. (Note: These terms are defined in greater depth in the Glossary.)

In reviewing this document, it is important to remember that land use planning decisions are only implemented on federal properties or properties managed by the BLM under properly executed management agreements. Also, the use of the revised terminology discussed above is an effort to clarify the document; it has not changed the decisions for proposed resource uses and therefore has not changed the management alternatives or environmental impacts.

[Note: As the result of minor boundary discrepancies, the figures in Table 1-1 below show some slight differences between the recorded legal acreages for the Monument and Planning Area, and the acreages calculated using the BLM's Geographic Information System (GIS, which allows production of maps and analysis based on computerized satellite data). Because the acreage differences are small and the time and cost to adjust them is uncertain, the BLM Planning Team has elected to show the differences here while using the GIS figures throughout the analysis. These differences are not large enough to change the outcome of the analysis.]

TABLE 1-1

ACRES IN THE MONUMENT AND PLANNING AREA

			Difference	
Area & Ownership	**Legal Acres**	**GIS Acres**	**Number of Acres**	**Percent of Legal Acres**
Monument				
Surface				
Federal	4,114	4,124	10	.24
State	521	521	0	0
Private (Total)	760	757	-3	-.40
Minerals				
Federal	4,554	4,565	11	.24
State	521	521	0	0
Private (Total)	320	316	-4	-1.27
Monument Total	5,395	5,402	7	.13
Planning Area				
Surface				
Federal	5,077	5,089	12	.24
State	521	521	0	0
Private	10,148	10,025	-123	-1.23
Minerals				
Federal (all minerals)	5,517	5,530	13	.24
(gold, silver & quicksilver)	9,388	9,268	-120	-1.28
State	521	521	0	0
Private (all minerals)	320	316	-4	-1.27
(except gold, silver & quicksilver)	9,388	9,268	-120	-1.28
Planning Area Total	15,746	15,635	-111	-.70

Natural and Cultural Resources and Uses

Elevation of the Monument ranges from 5,570 feet to 6,760 feet above sea level. In the traditional Cochiti Keresan language of the Pueblo de Cochiti, Kasha-Katuwe means "white cliffs." Light-colored, cone-shaped tent rocks that were formed by erosion of layers of volcanic ash and stream-deposited gravel are related to volcanic activity that occurred in the Jemez Mountains 6 to 7 million years ago. Rhyolite lava that filled one crater active at that time forms the steep canyon walls at the junction of Peralta and Colle Canyons in the northern part of the Monument. (Refer to Chapter 3, the "Geology, Minerals and Paleontology" section for more detailed information on the area's geology.)

With its special features, this area provides a remarkable outdoor laboratory for teaching students and other interested visitors about geologic processes. In addition to being a valued research site, the Planning Area is a favorite location for field trips by University of New Mexico students and professors in the Department of Earth and Planetary Sciences, as well as by groups from other universities, schools and organizations.

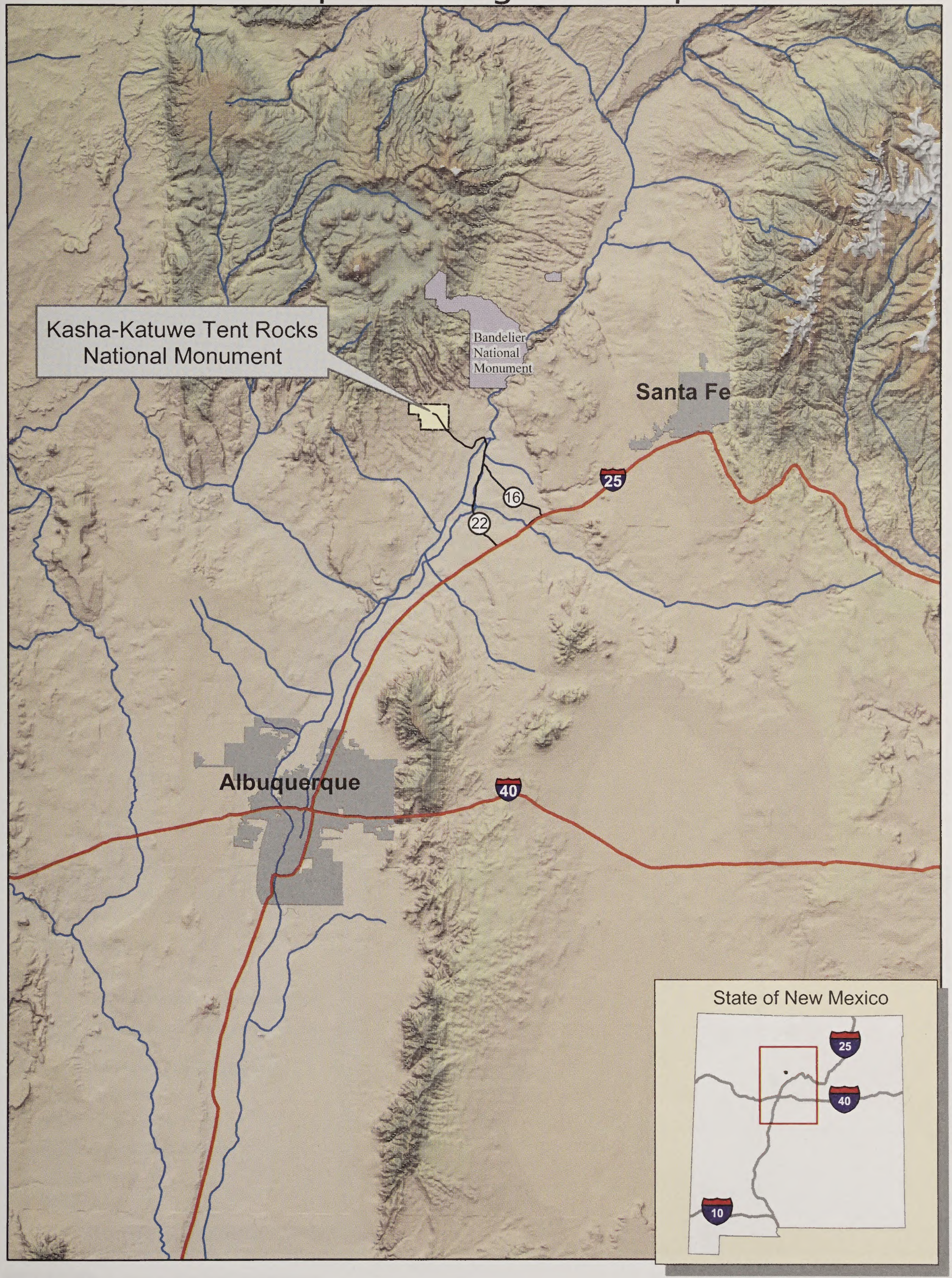
Intensive recreational uses of public lands in the Planning Area are concentrated around the main cluster of tent rock formations, the adjoining canyons, and at the Scenic Overlook (refer to Map 3). Daytime uses such as hiking, sightseeing, picnicking, photography, and education are common. [Note: The Monument is closed to camping through supplementary rules published in the *Federal Register* (61 FR 92: 21479-483; May 10, 1996).] The season of use is year-round, with the peak months being April through November. Recreational facilities have been provided near the tent rock formations for resource protection and user convenience.

The Monument supports a variety of vegetation. The area contains a population of pointleaf manzanita (*Arctostaphylos pungens*), a shrubby species known primarily from the Sierra Madre of Mexico. This population site is one of the northernmost in the United States, containing this unique species that has adapted to the cooler and moister weather of northern New Mexico (Knight 1983).

Existing data suggest that a full array of cultural resources may be present within the Planning Area. These range from early prehistoric to historic, and include areas with socio-cultural values. The most common cultural resources are attributable to prehistoric Pueblo Indian, modern Pueblo Indian, and historic Hispanic use of the area.

Within the Monument, two operators are permitted two grazing allotments for their livestock. The Peralta Allotment (#123) includes approximately 2,008 acres, while the Tent Rocks Allotment (#122) includes approximately 2,080 acres of the federal lands within the Monument. (Refer to Map 10 in the map section of this document, between Chapters 2 and 3.)

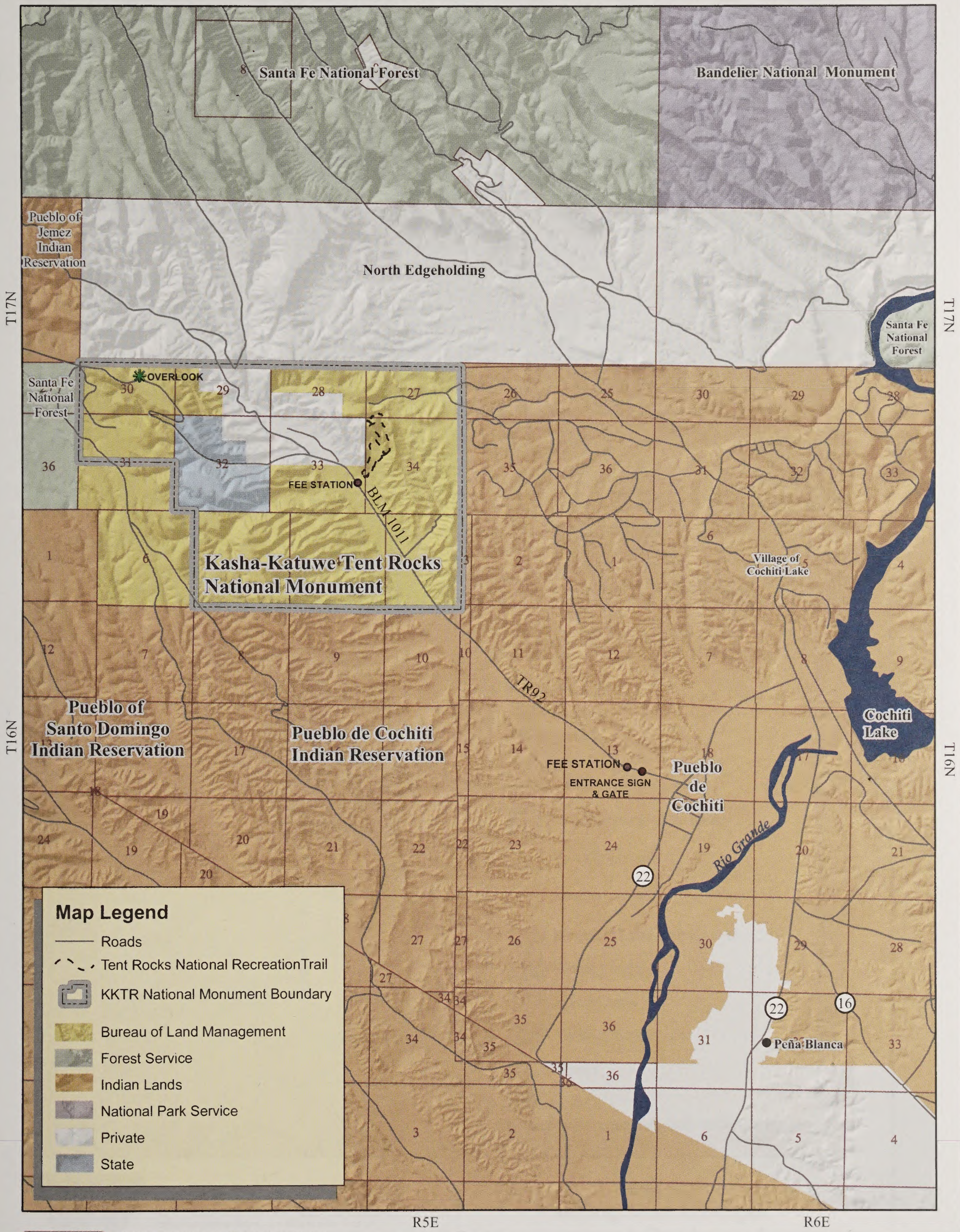
Map 1 -- Regional Map


Kasha-Katuwe Tent Rocks National Monument
Bandelier National Monument
Santa Fe
25
16
22
Albuquerque
40
State of New Mexico
25
40
10
N
W
E
S
0
10
20
Miles

Produced for the Kasha-Katuwe Tent Rocks Proposed RMP/Final EIS. No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by BLM. Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

Projection: UTM Zone 13
Datum: NAD 1983

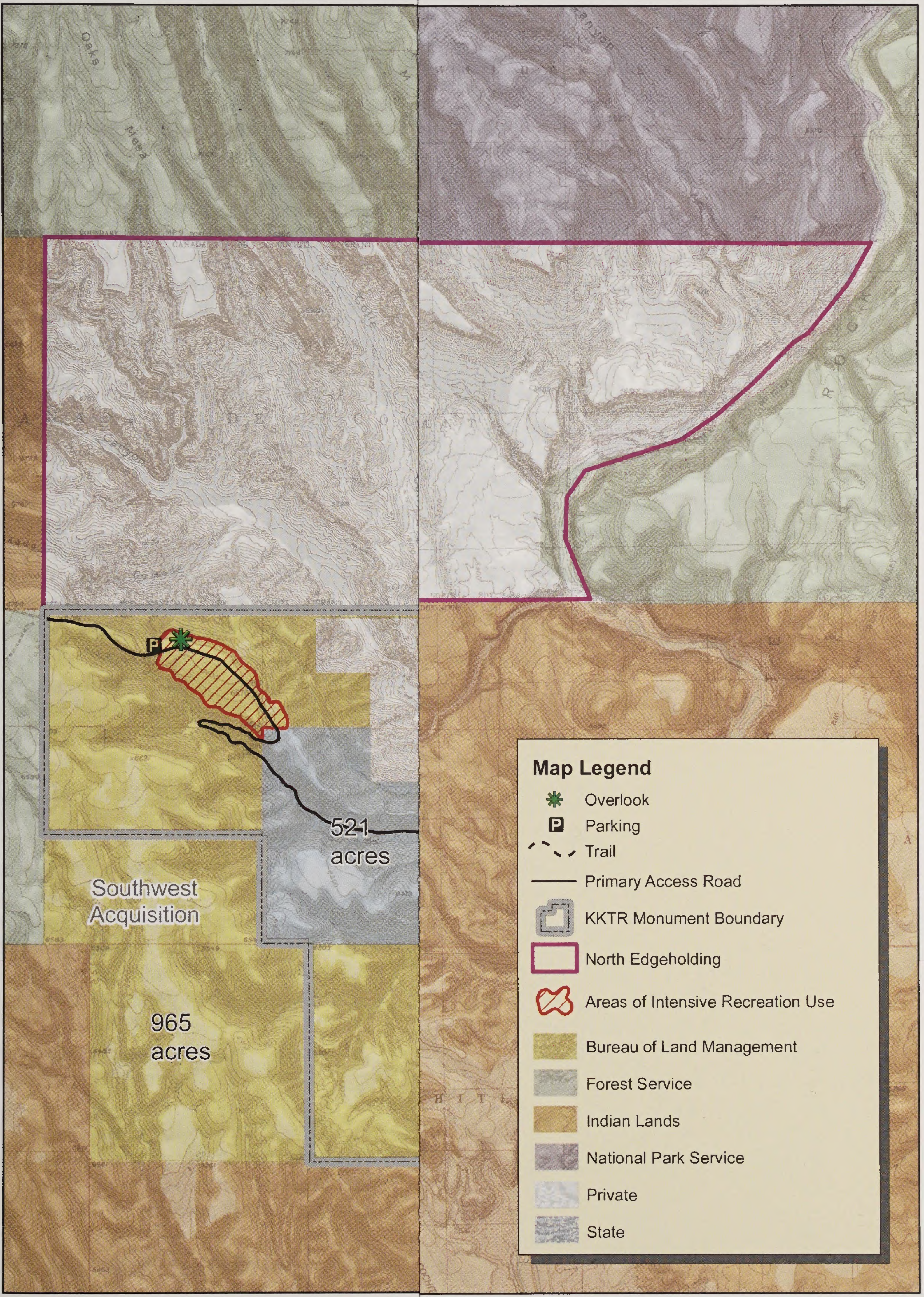
Map 2 -- Kasha-Katuwe Tent Rocks National Monument



Produced for the Kasha-Katuwe Tent Rocks Proposed RMP/Final EIS. No warranty is made by the Bureau of Land Management as to the accuracy, reliability or completeness of these data for individual use or aggregate use with other data, or for purposes not intended by BLM.Spatial information may not meet National Map Accuracy Standards. This information may be updated without notification.

0 1 2 Miles

Projection: UTM Zone 13
Datum: NAD 1983



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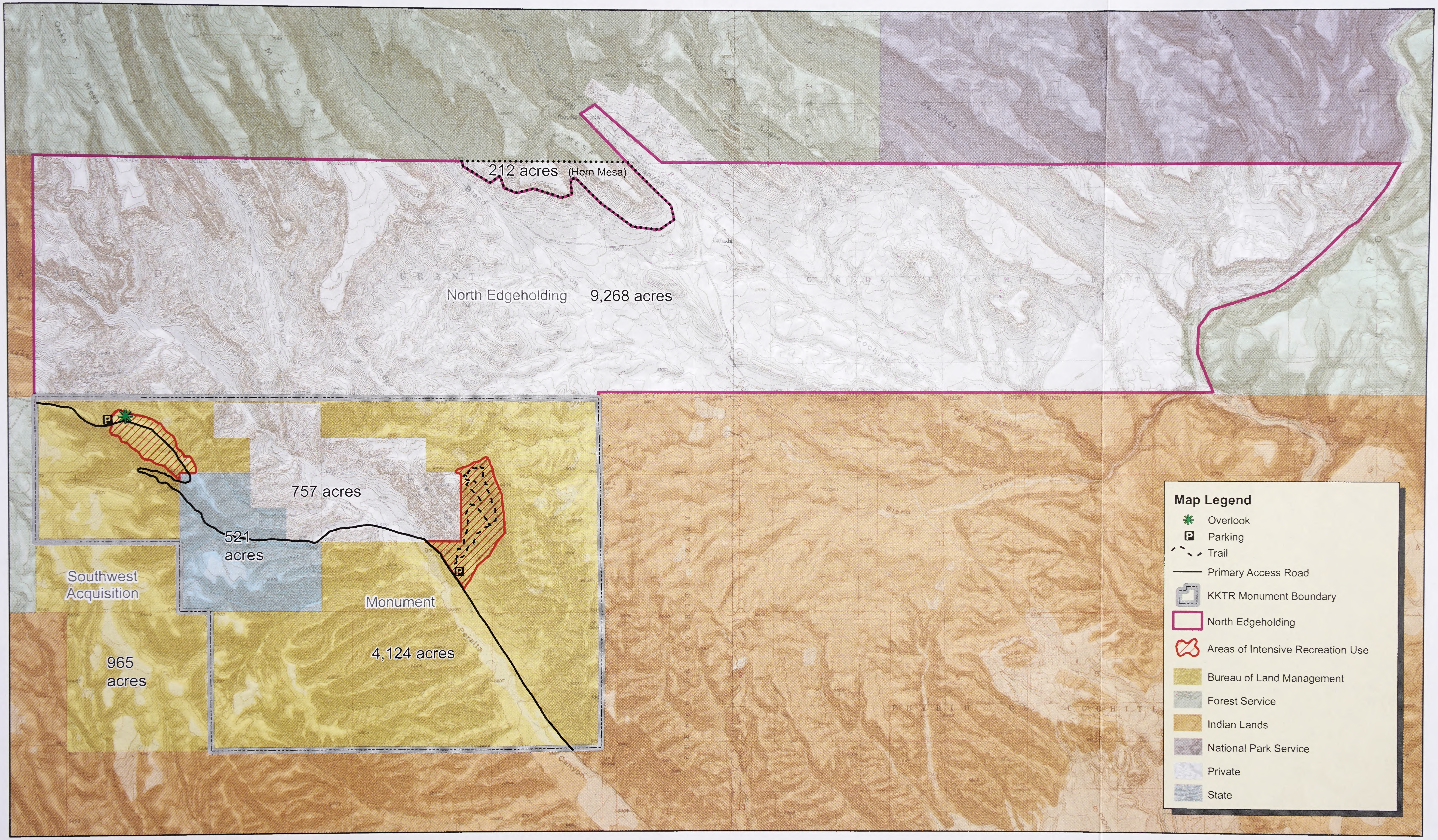
Map 3
Planning Area Acreages
(Includes Monument, Southwest Acquisition, North Edgeholding)



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0 0.5 1 Miles

Projection: UTM Zone 13
Datum: NAD 1983

Map 3
Planning Area Acreages
(Includes Monument, Southwest Acquisition, North Edgeholding)

PLANNING ISSUES

The following are issues or topics of concern for the Planning Area associated with the Kasha-Katuwe Tent Rocks National Monument. These were presented to the public during the scoping period; no other issues were raised at that time.

Issues are considered the "drivers" of a management plan; that is, they are topics of conflict or controversy between resource uses and management activities for a given area of public land that must be resolved in the plan. Because Proclamation 7394 set limits on how the Monument is to be managed, and the area is small compared to most other units within the National Landscape Conservation System, conflicts among resource uses that need to be resolved are not evident. However, the BLM addresses the following topics of concern in this plan and refers to them as "issues." The agency also addresses other basic environmental and management concerns to (1) provide comprehensive management guidance for resources within the Monument/Planning Area, and (2) satisfy legal requirements.

1. **Land tenure adjustment** and how land ownership will be incorporated into the management plan for the Planning Area, including the Monument.

   Within the boundary of the Monument are 521 acres of state land and 757 acres of private land. Other parcels of private land adjoin the boundary of the Monument.

2. How **access and transportation** will be managed in the Planning Area.

   The proclamation directs that the BLM, through this management plan, consider road closures or travel restrictions to protect the objects of interest in the Monument.

3. How **recreational activities** and visitor use will be managed.

   Recreational use of the Monument has been increasing over the past few years. The BLM has provided additional facilities and upgrades for visitor use and enjoyment, health and safety, and resource protection.

4. How **ecosystem restoration** will benefit the public and the Planning Area, especially the Monument.

   Oneseed juniper trees are encroaching into the grasslands and shrublands of the Monument and Planning Area. The woodlands and forest stands are overstocked, need thinning, and are being affected by drought conditions and beetle attacks.

5. How **American Indian uses and traditional cultural practices** will be incorporated into the management of the Planning Area, particularly the Monument.

   The Monument is adjacent to lands owned by several Indian pueblos and has special meaning to local American Indians.

PLANNING CRITERIA AND LEGISLATIVE CONSTRAINTS

BLM planning regulations (at Title 43, Code of Federal Regulations, Part 1610) require that the agency prepare planning criteria to guide development of all resource management plans. These criteria ensure that BLM plans are tailored to the identified issues and that unnecessary data collection and analyses are avoided. The criteria are based on applicable law, agency guidance, public comment, and coordination with other federal, state, local and American Indian tribal governments.

The planning criteria used in developing this management plan for the Kasha-Katuwe Tent Rocks National Monument and Planning Area are listed below.

- The BLM is completing the plan in compliance with the Federal Land Policy and Management Act of 1976 (FLPMA), all other applicable laws, and the provisions of Presidential Proclamation 7394 (refer to Appendix A). To protect the objects of geological, cultural and biological interest in the Planning Area, the plan must meet the requirements of Proclamation 7394.
- The BLM's Planning Team is consulting with the Pueblo de Cochiti and other tribal governments, the State of New Mexico, county and municipal governments, other federal agencies, and other interest groups, agencies and individuals.
- The plan establishes the guidance upon which the BLM will rely in managing the Planning Area.
- The plan includes an environmental impact statement based on NEPA standards.
- The plan provides opportunities for visitors to study, observe, and experience the geologic processes as well as other cultural and biological objects of interest within the Planning Area.
- Consistent with Proclamation 7394, the plan sets forth a framework for managing recreational activities and experiences.
- Livestock grazing management is prescribed by laws and regulations, but is excluded from within the Monument unless it advances the purposes of the proclamation. Through the plan, the BLM is determining if and how grazing would serve this function.
- The BLM recognizes the lifestyles of area residents in the plan.
- Through the plan, the BLM recognizes the State of New Mexico's responsibility and authority to manage wildlife, including hunting within the Planning Area.
- As part of the plan, the BLM is considering acquisition of state and private inholdings within the Monument and private lands adjacent to it.
- The plan alternatives address transportation, vehicular and other types of Planning Area access.

Numerous federal laws, executive orders, and policies guide development of BLM Resource Management Plans. Key laws applicable to this planning effort and the development of the planning criteria are as follows.

- National Environmental Policy Act of 1969, as amended
- Federal Land Policy and Management Act of 1976, as amended
- American Indian Religious Freedom Act of 1978, as amended
- Americans with Disabilities Act of 1990
- Archaeological Resources Protection Act of 1979, as amended
- Architectural Barriers Act of 1968
- Clean Air Act of 1963, as amended
- Clean Water Act of 1948, as amended
- Endangered Species Act of 1973, as amended
- Migratory Bird Treaty Act of 1918, as amended
- National Historic Preservation Act of 1966, as amended
- National Trails System Act of 1968, as amended
- Native American Graves Protection and Repatriation Act of 1990
- Rehabilitation Act of 1973, as amended

RELATIONSHIP OF THIS PLAN TO OTHER PLANS

Relationship to BLM Plans

The BLM makes three primary levels of land use planning decisions: the RMP level, the activity level, and the site-specific level. One RMP-level plan and two activity-level plans provide current guidance for managing the National Monument: (1) the *Rio Puerco Resource Management Plan* (1986, maintained and reprinted 1992; amended), (2) the *Albuquerque Field Office Fire Management Plan* (2004a), and (3) the *Protection Plan for Tent Rocks ACEC* (1987). [Note: The Rio Puerco RMP includes land use decisions for approximately 900,000 surface acres of public land, including the area that was called the "Tent Rocks ACEC" as of 1986.]

This stand-alone RMP for the Monument and Planning Area focuses mainly on broad resource objectives and direction, but also provides some activity-level guidance and site-specific decisions. Decisions from the three land use documents mentioned above are incorporated into Alternative A, Continuation of Existing Management. Once approved, this stand-alone RMP will replace these other plans for lands within the Monument.

Relationship to Other Agencies' Plans

BLM planning regulations require that RMPs be consistent with officially approved, resource-related plans of other federal agencies, state and local governments, and American Indian tribes, so long as these plans are also consistent with the purposes, polices, and programs of the federal laws and regulations applicable to public lands. This RMP is consistent with the following officially approved, resource-related plans of other federal agencies, local and tribal governments.

- The *Sandoval County Comprehensive Zoning Ordinance*, which applies to private lands within the Planning Area.
- The *Master Plan, Design Memorandum No. 13—Cochiti Lake, Rio Grande, New Mexico*. The U.S. Army Corps of Engineers, Albuquerque District, prepared this plan in 1973 in cooperation with the Pueblo de Cochiti. The lake lies a few miles east of the Monument (refer to Map 2).
- The *Santa Fe National Forest Plan* (USDA, FS 1987), which applies to lands near the northern and western boundaries of the Planning Area.
- The National Park Service's *Business Plan* for the nearby Bandelier National Monument (USDI, NPS 2001).

Chapter 2

CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

INTRODUCTION

Contents of This Chapter

This chapter contains information on how the BLM would manage the resources and uses in the Planning Area (Kasha-Katuwe Tent Rocks National Monument, adjoining lands and their resources) under any of three different alternatives. BLM staff members have developed these alternatives based on guidance contained in Proclamation 7394 establishing the Monument, the National Environmental Policy Act of 1969 (NEPA), the Federal Land Policy and Management Act of 1976, BLM resource management planning regulations, professional expertise and experience, and input from the public.

Ten sections make up the chapter (including this introduction). Specifics of each alternative are found in the fifth section of the chapter, "Description of the Proposed Action and Alternatives" (page 2-13). In the seventh section of the chapter, highlighted for ease of identification, is a list of RMP-level decisions intended to be made under Alternative B, the Agency Preferred Alternative (refer to pages 2-34 through 36). These proposed decisions are protestable under this Proposed Plan. Implementation decisions identified in this plan (in the eighth section of the chapter, beginning on page 2-36) cannot be protested, although they can be appealed after the Record of Decision is signed and published.

The second section of the chapter, "Proclamation Management Requirements (All Alternatives)," lists the specific conditions established for the Monument in Presidential Proclamation 7394. (A copy of the proclamation is found in Appendix A.) These conditions apply across the Planning Area under all alternatives. The chapter's third section, "Management Guidance Common to All Alternatives," lists the BLM's management measures, decisions and guidelines already in place that will be carried forward for the Planning Area regardless of which alternative is selected. BLM resource program management goals and objectives are listed in the fourth section of the chapter, while the chapter's sixth section describes the monitoring program the BLM will conduct in the Monument and Southwest Acquisition.

Brief discussions of the alternatives considered but not analyzed in detail are found in the chapter's ninth section. Finally, a summary of impacts by issue is given in Table 2-9.

The BLM Planning/Environmental Assessment Process for the Monument and Planning Area

A BLM Resource Management Plan (RMP)/Environmental Impact Statement (EIS) documents the agency's land use planning and environmental analysis for a given area. Analysis of RMP alternatives generally leads to RMP-level land use planning decisions (more general or broad in scope) by resolving resource use issues. However, this analysis may also lead to activity- and project-level planning decisions (more site-specific and detailed) that are required to make changes in resource management for a Planning Area. Furthermore, some issues cannot be resolved through alternative analysis alone, but require monitoring of the results of management practices. These results then trigger management changes designed to lead to the achievement of a desired condition or result.

As outlined in the BLM Land Use Planning Handbook (H-1601-1) and NEPA, the agency must identify a range of reasonable land use planning alternatives. The regulations of the Council on Environmental Quality (CEQ—Title 40, Code of Federal Regulations, Section 1502.4) also require that an Environmental Impact Statement (EIS) rigorously explore and objectively evaluate reasonable alternatives to a proposed action. One alternative is the "No Action" Alternative, which is required for baseline impact analysis under planning and environmental regulations. The BLM has gathered input into the development of both reasonable and practical management alternatives for the Monument and Planning Area through its public scoping process, which officially began for the Monument in February 2004 (with the publication in the *Federal Register* of the BLM's Notice of Intent to prepare an RMP/EIS—Vol. 69, No. 14, pp. 3167-69; January 22, 2004).

Each of the three alternatives presented in this document has a different blend or balance of resource allocations, uses, and protection. The analysis of the impacts of each alternative is done to guide managers in making informed land use decisions about the Monument and Planning Area. Different combinations of resource uses are identified to resolve resource management issues, concerns, and conflicts. Alternatives must provide optional ways of meeting the BLM's resource use and protection responsibilities, through resource allocations and methods that will meet present and future national needs. These alternatives must be reasonable and achievable; provide a mix of resource protection; manage use and development; be responsive to the issues; meet the planning criteria; and comply with federal laws, regulations, and BLM planning policies.

This is a new "stand-alone" RMP for the Monument and Planning Area. Therefore, all RMP-level management decisions applicable to these areas are stated in this document.

Decisions are also analyzed for the use of resources on an adjoining tract of land that has characteristics or resource values complimentary to those for which the Monument was proclaimed. Acquisition of this land is recommended under each alternative, provided willing sellers are available. Under the No Action Alternative, the BLM would set up Cooperative Management Agreements with adjoining landowners to consolidate land management and use, if acquisition of nonfederal land was not possible.

PROCLAMATION MANAGEMENT REQUIREMENTS (ALL ALTERNATIVES)

Specific language in the proclamation establishes some conditions that apply to management of the Monument regardless of which alternative (or combination of alternatives) the BLM chooses. These conditions include the following.

- All federal land and interest in lands within the boundaries of the Monument are withdrawn from all forms of entry, location, selections, sale, leasing or other disposition under the public land laws. This withdrawal applies under (but is not limited to) the mining laws and all laws relating to mineral and geothermal leasing. The only exception to this withdrawal would be an exchange that would further the protective purposes of the Monument.
- The use of all motorized and mechanized vehicles off road is prohibited, except for emergency or authorized administrative purposes.
- Lands and interests in lands within the Monument not owned by the United States are reserved as a part of the Monument if title to them is acquired by the United States.
- The BLM will manage the Monument in close cooperation with the Pueblo de Cochiti.
- The management plan for the Monument will include appropriate transportation planning that addresses the actions, including road closures or travel restrictions, needed to protect the geologic, cultural, and biological objects of interest identified in the proclamation (refer to Appendix A) and to further the purposes of the American Indian Religious Freedom Act of August 11, 1978 (Title 42 of the U.S. Code, Section 1996).
- The Secretary of the Interior will discontinue livestock grazing on the portion of the grazing allotments within the Monument, under applicable laws, unless such use will advance the purposes of the proclamation.
- Nothing in the proclamation enlarges or diminishes the jurisdiction of the State of New Mexico over fish and wildlife management.

- The Monument is subject to valid existing rights.
- The proclamation did not reserve water as a matter of federal law. However, any water use or rights reserved or appropriated by the United States on or before the date of the proclamation are not reduced or relinquished. The Secretary of the Interior will work with appropriate state authorities to ensure that any water resources needed for Monument purposes are available.
- Nothing in the proclamation revokes any existing withdrawal, reservation, or appropriation; however, the Monument is the dominant reservation.
- No person may use, injure, destroy, or remove any feature of this Monument without authorization, nor locate nor settle upon any of the lands.

MANAGEMENT GUIDANCE COMMON TO ALL ALTERNATIVES

Some existing actions, decisions, and guidelines under which the area including the ACEC has been managed have effectively met public needs and/or resolved issues, so the BLM will continue to use them in the Monument and Planning Area. These are brought forward from the *Rio Puerco Resource Management Plan* (USDI, BLM 1986; maintained and reprinted 1992) and the *Final Protection Plan for Tent Rocks, An Area of Critical Environmental Concern* (USDI, BLM 1987) and are described below. Other resource or program management guidance that would be used under any alternative also is included in this section. This includes some proclamation conditions that will be applied to Planning Area lands other than federal monument lands.

Access and Transportation

Numerous roads exist in the Monument and Planning Area, developed either by continuous casual use or for a purpose such as the removal of material excavated from the area's old mines. If not needed for visitor, safety or administrative purposes, some of these roads will be closed. BLM staff will determine restoration measures such as stabilization and reseeding to prevent soil erosion. Such Best Management Practices for minimizing sediment pollution will be developed and implemented on a site-specific basis. (Refer to "Water Resources" in the discussions of the three alternatives below for additional information.)

Air Quality

The BLM's objective for air quality is to prevent significant deterioration of the Class II airshed designated by the Clean Air Act. Meeting this objective requires that BLM's own management actions and any authorizations the agency grants for the use of public lands comply with and support local, state, and federal laws. All BLM actions and use authorizations will be designed and stipulated to protect air quality in and adjacent to the Monument and the nearby National Park Service Class I area, Bandelier National Monument.

American Indian Uses and Traditional Cultural Practices

The BLM will continue close coordination with the Pueblo de Cochiti in the day-to-day operations of the Monument and Planning Area. For actions requiring an Environmental Assessment (EA) and/or Environmental Impact Statement (EIS) under NEPA, the BLM will consult with the Cochiti, Santo Domingo, Jemez, and Zia Pueblos, as well as any tribes that may come forward later to express concern about traditional cultural properties, places, and uses in the Monument and Planning Area. These tribes, plus the Jicarilla Apache Nation and the Hopi Tribe, will be included under any consultation required by the Native American Graves Protection and Repatriation Act.

Cultural Resources

Under any alternative selected, the BLM would comply with the National Historic Preservation Act through procedures described in the "Protocol Agreement Between New Mexico Bureau of Land Management and New Mexico State Historic Preservation Officer" (signed in June 2004) or any later agreements. The original agreement normally requires intensive archeological survey (BLM Class III inventory) of areas that would be directly affected by a project or action. If archeological resources are found, the preferred course of action is to redesign the project so that the remains are avoided. If this is not possible, the BLM will undertake data recovery or other measures developed in consultation with the New Mexico State Historic Preservation Officer to reduce adverse impacts.

Environmental Justice

The BLM must identify, inform and consult with minority and low-income groups about federal actions that may affect them, and should not disproportionately impact these groups in an adverse way. Minority and low-income people will likely be affected by actions in the Monument and Planning Area. Therefore, they are being consulted and kept informed.

Fire Management

The proposed actions and priorities in the *Albuquerque Field Office Fire Management Plan* (USDI, BLM 2004a) and the *Fire and Fuels Management Resource Management Plan Amendment and Environmental Assessment for BLM Lands in New Mexico and Texas* (USDI, BLM 2004b) apply to the Planning Area and any acquired properties therein. (These actions and priorities are also discussed below under "Vegetation Treatments.")

Through proposed vegetation treatments, the BLM will focus on moving the landscape toward the desired future condition of Fire Regime Condition (FRC) Class 1. FRC Class 1 is characterized as being within the natural (historical) range of variability for vegetative structure and function; fuel composition; fire frequency, severity and pattern; and other associated disturbances. No part of the Planning Area is currently in FRC Class 1. The priority for the Planning Area is to treat areas that are in FRC Classes 2 and 3.

The BLM initially addressed fire and fuels management for this area as part of *Categorical Exclusion #NM-010-FY2003-066: Tent Rocks Wildland Urban Interface, Hazardous Fuels Reduction Project* (USDI, BLM 2003). In this project, the agency proposed to reduce stand densities in the Monument by mechanical thinning (with chainsaws); harvesting fuelwood; and lopping and scattering, piling and/or chipping, followed by a prescribed burn. Trees in areas with slopes over 15 percent were eliminated from the proposed treatments, so 934 acres within the Monument are suitable. These treatments will be carried out regardless of the alternative selected for Planning Area lands under BLM management.

Manzanita— used for medicinal purposes by American Indians.

Hazardous Materials/Solid Waste

None of these sites are known to exist within the Planning Area. The BLM relies on routine fieldwork activities and non-BLM sources to discover and report spills or other releases of hazardous materials/solid wastes on public lands. The agency investigates reported sites, and plans needed containment and/or cleanup responses on a case-by-case basis. Sites that are reported will be handled under current regulations, with potentially responsible parties identified and pursued based on best available information.

Lands and Realty

The BLM's ACEC Protection Plan included discussions of Cooperative Agreements with non-federal landowners who would provide land with uses complimentary to the ACEC values. These values have now become Monument values, and it is proposed that lands adjoining the Monument be acquired wherever willing sellers are available. Currently, the University of New Mexico owns one adjoining parcel of approximately 9,268 surface acres [plus all minerals except gold, silver & quicksilver (mercury)] north and northeast of the Monument (the

"North Edgeholding"—refer to Map 3 in Chapter 1).

Livestock Grazing

In accordance with Presidential Proclamation ? 7394, annual grazing use will be discontinued on federal land under the two federal grazing permits that exist within the Monument. No new renewable grazing permits will be issued on federal land within the Planning Area. Acreage closed to grazing will be fenced and range developments removed ? if they are not converted to another purpose (e.g., wildlife waters, recreational uses). Short-duration grazing of forage on federal land within the Planning Area will be allowed if the BLM determines it will advance the purposes of the proclamation. If such use is allowed, it is expected that it will be focused on helping to attain specific vegetative and ecological objectives.

Before authorizing livestock grazing on federal land within the Planning Area, the BLM will prepare an Environmental Assessment to determine the impacts of the proposed grazing use. If grazing use is approved, the agency will issue a temporary, nonrenewable grazing permit with terms for the proposed grazing period. As stated in the grazing regulations at Title 43, Code of Federal Regulations Part 4100, nonrenewable grazing permits may be issued on an annual basis to qualified applicants when forage is temporarily available, provided this use is consistent with multiple use objectives and does not interfere with existing livestock operations on public land.

Noxious Weed Control

One exotic invasive weed species occurs extensively on federal land within the Planning Area. This is downy brome grass or "cheatgrass" (*Bromus tectorum*). This grass has spread throughout New Mexico and the Western United States, and the likelihood of successfully controlling it is low.

A few isolated individual saltcedar plants grow in the vicinity of the old pumice mines and in the bottom of Peralta Canyon, and the Southwest Acquisition contains a small population of exotic thistles. These isolated populations are considered to be easily controllable, while the cheatgrass will likely be very difficult to control.

Nevertheless, monitoring and a vigorous integrated weed management program will be a part of Planning Area management (including on acquired land), in accordance with Standard Operating Procedures found in Instruction Memorandum NM-010-99-01 ("Noxious Weed Prevention Schedule for Albuquerque Field Office"—refer to Appendix B.) Any Cooperative Agreement that is developed for land use will also include provisions for weed monitoring and treatment.

Paleontology

No overriding federal law specifically addresses paleontological resources. Management of the resource is directed principally under the Federal Land Policy and Management Act and the National Environmental Policy Act. The following also afford protection of paleontological resources: the Antiquities Act of 1906, National Natural Landmarks program under the Historic Sites Act of 1935, Executive Order 11593 (Protection and Enhancement of the Cultural Environment) of 1971, National Historic Preservation Act of 1966 (as Amended), Federal Cave Resource Protection Act of 1988 (PL 100-691), and Secretarial Order 3104. Various subparts of Title 43 of the Code of Federal Regulations address the collection of invertebrate fossils, fossil plants, and protection of paleontological resources from operations authorized under the mining laws.

Fossils are relatively rare, fragile and nonrenewable resources. Although no fossil resources have been documented within the Planning Area boundary, if they are found there, the BLM will locate, evaluate, manage and protect them. The agency has an assistance agreement with the New Mexico Museum of Natural History and Science. Under this agreement, anyone without a permit who finds vertebrate fossils on public land can bring them to the attention of the museum. This ensures the fossils will be available to the people of New Mexico and the United States. The BLM will handle any such discoveries on a case-by-case basis.

Recreational Uses

The BLM will continue to manage the Monument as a fee site, as originally authorized by the Department of the Interior and Related Agencies Appropriations Act of 1996 (Public Law 104-134). The agency will collect, retain, and reinvest collected fees at this site under the authority of the Federal Lands Recreation Enhancement Act of 2004 (P.L. 108-447), which has replaced the previous fee collection authority under the Land and Water Conservation Fund Act of 1965.

The Federal Land Policy and Management Act and the Land and Water Conservation Fund Act empower the BLM to issue Special Recreation Permits according to its own procedures and fee schedules for uses such as group activities, commercial recreational tours, and other special recreational uses. Issuing permits is mandatory for commercial and noncommercial recreation-related uses of BLM-administered federal lands. The BLM may also require permits for any uses in special areas where the agency determines that the law requires it. Special areas include those such as the Monument with congressional, administrative, or land use planning designations. When issuing permits at the Kasha-Katuwe Tent Rocks National Monument, the agency will continue to follow the guidelines found in BLM Manual and Handbook H-2930-1, "Recreation Permit Administration."

Soil and Water Resources

Management of the soil and water resource programs involves direct activities as well as support for other program activities. Direct program activities include maintaining water source inventories, participating in state water rights adjudications (none of which affect the Monument at this time), and evaluating watershed conditions in terms of erosion/ sedimentation, water quality, and supply. Program specialists also plan, implement, monitor and maintain watershed rehabilitation projects. Information on soil types helps in properly locating facilities, as well as establishing visitor observation and interpretive opportunities.

For the facilities and land management activities in the Planning Area, support activities include hydrologic design, assessing impacts and recommending mitigation measures. Soils information for the Planning Area will be developed as needed when Cooperative Management Agreements or acquisitions are made.

In this RMP, BLM resource specialists are recommending which roads and trails should remain open for use. For those roads and trails that will be closed, agency soil and water specialists will recommend protection measures (Best Management Practices) to minimize watershed impacts and/or restore natural conditions. These specialists will also analyze physical water availability and quality for visitor use, acquire water rights (if needed), and ensure continued compliance with the Safe Drinking Water Act. To assess the potential of Peralta Canyon to support riparian habitat, soil and water specialists will conduct hydrologic studies and analysis, including stream flow gauging of the channel.

(Note: For water resource management, the term "Best Management Practices" or "BMPs" is defined as "methods, measures or practices selected by an agency to meet its nonpoint source control needs. BMPs include but are not limited to structural and nonstructural controls and operation and maintenance procedures. BMPs can be applied before, during and after pollution-producing activities to reduce or eliminate the introduction of pollutants into receiving waters." The source of this definition is Title 40 of the Code of Federal Regulations, Part 130, "Water Quality Planning and Management.")

The soil types found in the Monument and Southwest Acquisition (generally grouped by their position on the landscape) include the acreages shown in Table 2-1 below and on Map 4 (in the map section of this document). (Note: Chapter 3 contains expanded information on the Soil Map Units in the Monument.)

Special-Status Plants

None of these plant species is known to exist within the Monument or Southwest Acquisition. Any plants located will be managed on a case-by-case basis.

Threatened, Endangered and Sensitive Wildlife Species

The Endangered Species Act (ESA) requires special protection and management of federally listed threatened and endangered (T&E), proposed and candidate plant and animal species (16 U.S.C. §§ 1531-1544; December 28, 1973, as amended 1976-82, 1984, 1988). The BLM implements the ESA through its National Special Status Species Policy contained in the BLM Manual, Section 6840. This policy directs the agency to plan and implement programs to conserve T&E species, and to ensure that actions authorized, funded, or carried out do not jeopardize listed species or contribute to the need to list a species. This policy further charges BLM State Directors with the responsibility to give state-designated species the same level of protection as provided for federal candidate species. Specifically, the BLM is to carry out the following.

- Determine the distribution, abundance, reasons for the current status, and habitat needs for candidate (and sensitive) species occurring on land administered by the agency, and evaluate the significance of agency-administered lands or actions in maintaining those species.
- For those species where agency-administered lands or actions have a significant effect on their status, manage the habitat to conserve the species by the following means.
- Include candidate (and sensitive) species as priority species in land use plans.
- Develop and implement area-wide and/or site-specific management plans for candidate (and sensitive) species that include specific habitat and population management objectives designed for recovery, as well as the management strategies necessary to meet those objectives.
- Ensure that BLM activities that affect the habitat of candidate (and sensitive) species are carried out in a manner consistent with the objectives for those species.
- Monitor populations and habitats of candidate (and sensitive) species to determine whether management objectives are being met.

The BLM has made a "No Affect" determination ? for all the listed, proposed, or candidate species identified by the U.S. Fish and Wildlife Service as potentially occurring in Sandoval County, New Mexico. No current or potential habitat exists in the Monument to support these species.

Neither does the Monument contain known critical or limiting habitat for special-status wildlife species. However, the BLM has identified 13 sensitive species as potentially occurring or having suitable habitat within the Monument and Southwest Acquisition (refer to Chapter 3). The BLM will manage these species in accordance with the agency's 6840 Manual. Agency staff will reevaluate the Planning Area for special-status species as the T&E species list for Sandoval County is updated.

Vegetation and Woodland Management

Where needed, vegetation and woodland treatments will consist of prescribed fire, mechanical ? methods, physical removal of excess vegetation, and chemical methods. The BLM will follow BLM Best Management Practices (BMPs) for vegetation treatment methods (refer to Appendix C). Some treatments may need to be combined with others for the best results, and some areas may need to be treated repeatedly to achieve the desired results.

TABLE 2-1

SOILS IN THE MONUMENT AND SOUTHWEST ACQUISITION—ACREAGE BY LANDSCAPE LOCATION AND LAND OWNERSHIP

Landscape Location	Land Ownership (Acres) [b]			
Soil Map Unit Number & Name [a]	BLM	State	Private	Total
Valleys 52—Totavi Loamy Sand 300—Waumac-Bamac Association	330	0	177	507
Mesa Tops & Fan Terraces 104—Cochiti Montecito Association [c] 206—Pinitos Loam 307—Flugle-Waumac Complex	2,412 [c]	243	0	2,655
Steep Mesa Sideslopes 345—Espiritu-Bamac Association 353—Cochiti-Espiritu Association 603—Laventana-Mirand Very Cobbly Loam	2,347	278	580	3,205
Totals	5,089	521	757	6,367

Notes: [a] Refer also to Map 4 (in the map section) and to the "Soils" section of Chapter 3.
[b] These are aggregate totals by landscape location, not by Soil Map Unit.
[c] Includes the 965-acre Southwest Acquisition.

During development of this RMP/EIS, the BLM considered the Healthy Forest Restoration Act as part of the agency's authorization for implementing hazardous fuels (vegetation management) projects. Any of these projects that were implemented in the Planning Area would not meet the criteria of the act (Healthy Forest Initiative, and Healthy Forest Restoration Act, Interim Field Guide, 2004).

Visual Resources

Both the Federal Land Policy and Management Act and the National Environmental Policy Act require that federal (public) lands be managed so as to protect the quality of the scenic values. Presidential Proclamation 7394 created the Kasha-Katuwe Tent Rock National Monument under the Antiquities Act of 1906 (34. Stat. 225, 16 U.S.C. 431) to protect the complex landscape and spectacular geologic scenery. BLM Manual 8400 is the agency's guide for managing visual resources. It states that the BLM has the basic stewardship responsibilities to identify and protect visual values on federal (public) lands, and that visual resource management is a management responsibility shared by all resource programs. BLM Manual Handbooks H-8410-1 (Visual Resource Inventory) and H-8431-1 (Visual Resource Contrast Rating) also provide guidance.

Wilderness or Wilderness Study Areas

None of these areas lies within the Planning Area. However, the Santa Fe National Forest's Dome Wilderness and the National Park Service's Bandelier Wilderness adjoin the north edge of the Planning Area. None of these special areas is expected to affect the others' resource values.

Wildlife

Executive Order 13186 (2001) directs federal agencies to " . . . promote the conservation of migratory bird populations . . . ", and to " . . . support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable adverse impacts on migratory bird resources when conducting agency actions." Therefore it is important that the BLM provide adequate habitat for these bird species.

RESOURCE PROGRAM GOALS AND OBJECTIVES

Access and Transportation

The BLM's goals in managing access and transportation are (1) to promote the safety of all users of the public lands and (2) minimize the conflicts between the various users of those lands. To meet these goals, the agency designates all roads on public land in one of the following three categories: open, closed, or limited (open for authorized or emergency use only). The agency uses the following criteria when placing roads into one of the three categories.

- In designating roads, the BLM considers the protection of resources such as valuable wildlife habitat, cultural resource values, traditional cultural properties, watershed, and recreational values.
- When duplicate or multiple roads lead to the same location on public lands, the agency considers closing and rehabilitating at least one of these roads to deter use and protect the watershed and other resources.
- The agency considers limited use on roads where (1) trespassing on non-public land would be encouraged by an open designation; or (2) the road crosses non-public land and is needed for administrative purposes, emergency rescue or fire, and no other open roads exist nearby.
- The road serves as important access to facilities, recreational opportunities, or areas needed for program administration.
- The road can be reasonably patrolled and maintained.
- The road is reasonably located.
- The road generally complies with resources management objectives.
- Roads used for access under existing livestock grazing leases or other authorization will not be restricted.

American Indian Uses and Traditional Cultural Practices

The BLM 8120 Manual specifies a number of laws, executive orders, presidential memoranda, and secretarial orders that require government-to-government consultation regarding cultural, historical, and religious concerns of American Indians. Under these authorities the BLM seeks to ensure that tribal issues and concerns are given legally adequate consideration during decision-making. The agency is committed to protect sensitive information relating to tribal concerns, and to foster good working relationships with the tribes. Presidential Proclamation 7394 emphasizes the historical connection of the Kasha-Katuwe Tent Rocks National Monument with the Pueblo de Cochiti and places special emphasis on furthering the purposes of the American Indian Religious Freedom Act.

Cultural Resources

The goals of the BLM's cultural resources program are defined in BLM Manual 8100. Managing cultural resources is viewed as an integrated system of identifying and evaluating cultural resources, deciding on their appropriate uses, and administering them accordingly. The objectives are as follows.

- Respond in a legally sufficient and professional manner to the legal authorities concerning historic preservation and cultural resource protection, and to the principles of multiple use.
- Recognize potential public and scientific uses of cultural resources on public lands, managing the lands and cultural resources so that these uses and values are appropriately protected.
- Contribute to land use planning and multiple use management in ways that (1) make optimum use of the thousands of years of land use history inherent in cultural resource information, and (2) safeguard opportunities for achieving appropriate uses of cultural resources.
- Protect and preserve in place representative examples of the full array of cultural resources on public lands for the benefit of scientific and public use by present and future generations.
- Ensure that proposed land uses avoid inadvertent damage to federal and nonfederal cultural resources.
- Further the goals of the Department of Interior and BLM Strategic Plan, and the Government Performance and Results Act.

In describing the elements to be protected within the Monument, the Presidential proclamation places special emphasis on the remnants of human history scattered throughout the Monument.

Fire Management

Under the *Albuquerque Field Office Fire Management Plan*, the Planning Area is located in Fire Management Unit (FMU) B4. Under the fire management strategy developed for FMU B4 (Appropriate Management Response), wildland fires in the Planning Area will be managed in accordance with management objectives, based on current conditions and fire location. The goals of this strategy are (1) to prevent wildland fires from spreading to private lands, cultural resources, or improvements on BLM public land and other agency land, and (2) to protect recreational users and firefighters.

Livestock Grazing

The BLM's goals in permitting livestock grazing on public land, as stated in the Code of Federal Regulations (CFR), Title 43, Part 4100.0-2, are as follows.

- Promote healthy, sustainable rangeland ecosystems.
- Accelerate the restoration and improvement of public rangelands to properly functioning condition.
- Promote the orderly use, improvement and development of the public lands.
- Provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy rangelands.
- Establish efficient and effective administration of grazing on public rangelands.

Livestock grazing must be achieved in a manner consistent with land use plans, the principles of multiple use and sustained yield, environmental values, economic and other objectives stated at 43 CFR 1600, Subpart 1610; the Taylor Grazing Act of June 28, 1934, as amended (Title 43 of the U.S. Code, Chapter 315); and Section 102 of the Federal Land Policy and Management Act of 1976 (43 USC 1740).

Paleontology

Paleontological resources are of concern and require protection. Within the Planning Area boundaries are federal, state and private lands with the potential for such resources. The BLM's management goal for any of these resources that may exist in the area is to provide a consistent and comprehensive approach in identification, evaluation, protection and use. Any ground-disturbing activities on public land in the Planning Area will be considered on a case-by-case basis for the need to mitigate potential impacts.

Public Land Health

Objectives for public land health are found at 43 CFR 4180.1, which mandates that the following conditions exist.

- Watersheds are in—or are making significant progress toward—properly functioning physical condition (including their upland, riparian-wetland, and aquatic components).
- The soil and plant conditions support infiltration, soil moisture storage, and the release of water in balance with climate and landform.
- The soil and plant conditions maintain or improve water quality, water quantity, and timing and duration of flow.
- Ecological processes—including the hydrologic cycle, nutrient cycle, and energy flow—are maintained, or there is significant progress toward their attainment, to support healthy biotic populations and communities.

Recreational Uses

The management goals for the BLM's outdoor recreation program are as follows.

- Provide a broad spectrum of resource-dependent recreational opportunities to meet public needs and demands;
- Foster agency-wide efforts to improve services to the visiting public;
- Maintain high-quality recreation facilities to meet public needs and enhance the image of the agency;
- Improve public understanding and support by effectively communicating the agency's

mission of multiple use management to visitors.

For the Kasha-Katuwe Tent Rocks National Monument, the following additional objectives apply. Through the two Cooperative Agreements between the Pueblo de Cochiti and the BLM, the two entities strive to achieve the following.

- Enhance the manageability of the Monument;
- Provide for resource protection, visitor health and safety;
- Provide outstanding customer service for visitors while controlling visitor use;
- Provide for economic opportunity through employment and services;
- Ensure continuity of traditional tribal practices; and
- Maintain tranquility for the Pueblo de Cochiti.

Riparian Areas

The management goals for riparian areas are to maintain, restore, improve, protect, and expand riparian-wetlands areas for their productivity, biological diversity, and sustainability so they are in properly functioning condition. These goals were established in the *Environmental Impact Statement for Riparian and Aquatic Habitat Management Plan for the Albuquerque Field Office* (USDI, BLM 2000).

Within the BLM's Land Use Planning Handbook H-1601 [Appendix C, p. 2 I.B, Soil and Water (Land Use Plan Decisions)], the agency is to "Identify watersheds that may need special protection from the standpoint of human health concerns, aquatic ecosystem health, or other public uses. For riparian areas, identify desired width/depth ratios, streambank conditions, channel stubstrate conditions, and large woody material characteristics."

Soil and Water Resources

The management objectives for the water and soils resource programs are as follows.

- Protect, maintain, or improve the quality of the soil, water and air resources and watershed values associated with the public lands, including natural site productivity, air quality, and surface and ground water quality, quantity, and timing.
- Prevent deterioration of soil, air quality, and watershed conditions where technically and economically feasible, and to rehabilitate areas in which accelerated erosion and runoff have resulted in unacceptable resource conditions.
- Prevent or minimize the threat to public health and safety, damages to natural site characteristics, or economic losses due to floods, sedimentation, decreased water and air quality, or accelerated runoff and erosion.
- Prevent impairment of soil productivity due to accelerated soil loss or physical or chemical degradation of the soil resource.
- Ensure that BLM management actions and objectives are consistent with soil resource capabilities.
- Maintain or improve surface and ground water quality consistent with existing and anticipated uses and applicable state and federal water quality standards.
- Minimize the harmful consequences of overland flow and surface runoff on, or arising from, BLM-administered lands.
- Provide for the physical and legal availability of water to facilitate authorized uses of the public lands.

Special Geologic Features

The Planning Area and Monument contain a unique combination of geologic features, including exposed faults, tents, and remarkably informative volcanic tuff outcrops; these are referred to as "special geologic features" in this plan (refer to Map 5 in the map section). By definition, these are features that have extremely well-represented geology, with high aesthetic and educational value. Special geologic features exist on 167 acres of federal land, 439 acres of private land, and 23 acres of state land in the Monument, as well as on 1,655 acres of private land in the North Edgeholding (Cañada de Cochiti property) proposed for acquisition under Alternatives B and C.

The BLM's management goal is to protect these important, environmentally sensitive geologic resources in their natural condition (subject to ecological processes) while allowing recreation, scientific research and collection, and the development of mineral resources. [Note: Because 4,565 acres of federally owned minerals within the Monument have been withdrawn from mineral entry, only the minerals beneath 837 acres (316 private and 521 state) could be developed.]

Snow emphasizes the layering of the tent walls.

The BLM will develop appropriate interpretive materials (e.g., signs, plaques, brochures) to explain the special geologic features of the area, such as tents, faults, and flows. The agency will allow scientific collection and research only by an accredited university or other organization under permit. Permits will be issued only in the areas determined to be the least susceptible to impacts, excluding those areas composed of the "tents." When proposals are submitted for scientific research and collection in the Planning Area, the BLM will (1) evaluate the proposals and permit applications, (2) develop appropriate stipulations for geological resource protection, and (3) conduct compliance inspections. If the inspections indicate that any study is unduly and unnecessarily degrading the natural landscape within the Planning Area, the agency will severely limit or eliminate study in affected areas.

Vegetation

BLM Handbook H-1601 (Land Use Planning) states that the agency's goal for vegetation is to "Identify desired future conditions for vegetative resources, including the desired mix of vegetative types, structural stages, and landscape and riparian functions, and provide for native plant, fish, and wildlife habitats. Identify the actions and area wide use restrictions needed to achieve desired vegetative conditions" [Appendix C, p. 3, Section C, Vegetation (Land Use Plan Decisions)].

The objectives of vegetation treatments are as follows.

- Reduce the risk of hazardous vegetative fuels to human life and property;
- Reduce the risk or cost of fire suppression in areas of hazardous fuels buildup;
- Achieve other resource objectives;
- Treat lands that are in Fire Regime Condition (FRC) Classes 2 and 3; and
- Maintain lands that are in FRC Class 1.

Visual Resources

The BLM's overall goal for visual resources is to manage federal lands in a manner that protects scenic (visual) values. The objectives for the Visual Resource Management classes assigned to federal lands in the Planning Area are as follows. (Additional information is found in Appendix D.)

- Class II—Retain the existing character of the landscape, and prevent changes from use authorizations and management actions that would attract attention. Changes in the landscape should repeat the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape.
- Class III—Activities and structures may attract attention but not dominate the view of the casual observer. Changes would borrow from the basic elements found in the natural features of the surrounding characteristic landscape.

After inventory of their visual resources, any lands acquired would be placed in one of these two classes, based on (1) the extent of cultural modifications to the landscape, or (2) the need to implement future management actions for resource protection and rehabilitation, or (3) the need to install facilities to accommodate visitor health, safety and customer service needs.

Wildlife

For wildlife, the management goals include those listed below, which are brought forward from the *Final Protection Plan for Tent Rocks, An Area of Critical Environmental Concern*

(USDI, BLM 1987). The BLM will manage the Planning Area in the following ways to maintain and improve healthy habitats for wildlife.

- Promote awareness of wildlife values.
- Protect habitat for non-game birds and improve big-game winter habitat.
- Provide water development and rehabilitate grassland parks.

DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

Alternative A

If BLM managers selected Alternative A (Continuation of Existing Management, or the "No Action" Alternative), the agency's focus would be to continue implementing the existing directions and recommended actions for the Monument and Southwest Acquisition. These directions and actions are contained in the existing guidance, agreements, laws, plans (RMP and ACEC Protection Plan) and policies that (1) are currently in effect, (2) existed before the proclamation that designated the Monument, and (3) are in compliance with the proclamation. The BLM recognized the area for its cultural, natural, scenic and recreational values and designated it as an ACEC through the *Rio Puerco Resource Management Plan* to protect, maintain, and enhance these values. Through that RMP, the agency set management objectives and actions to help achieve those objectives.

Under Alternative A, current levels of motorized and non-motorized recreational uses would continue, with no limitation on numbers. Motorized use would continue to be limited to existing roads and trails. Non-motorized recreational use would be allowed to take place throughout the Monument and Southwest Acquisition and be regulated by rules of conduct published at 43 CFR, Part 8365 and the supplemental rules published in the *Federal Register* on May 10, 1996 (61 FR 92: 21479-483). The BLM would continue to issue Special Recreation Permits to qualified applicants for organized commercial events. The current levels and mix of multiple resource uses and resource condition trends would continue, except for livestock grazing. Methods of management on public lands in the Monument and Southwest Acquisition would continue as described in the "Continuing Management Guidance" section above, and would be amended only as needed at implementation to comply with the proclamation.

Access and Transportation— Approximately 25.25 miles of vehicular transportation routes and 8.43 miles of hiking and livestock trails exist on federal land in the Monument and Southwest Acquisition. (The mileage of roads and trails on nonfederal land is unknown.) About 24.2 miles of the vehicular routes would be open to public use, with 1.05 miles being limited to authorized or emergency use only. Of the hiking trails on federal land, 8.03 miles would be open for hiking, equestrian use, and/or research (including a 2.3-mile National Recreation Trail). No additional equestrian trails would be developed under Alternative A. (Refer to Map 6 in the map pocket for road and trail segment locations, and Tables 2-2, 2-3 and 2-4 below for mileages, status and proposed uses.)

BLM routes existing on federal lands within the Monument and Southwest Acquisition include 5.9 miles of a collector road (BLM Road 1011), 5.6 miles of resource roads, and 13.75 miles of primitive roads (refer to the Glossary for definitions of these types of roads). No roads would be closed to public use under Alternative A, although .05 mile of a primitive road and 1 mile of a resource road would be limited to authorized or emergency use only. (Miles of road that would be used in areas potentially under Cooperative Management Agreements are unknown.)

For **American Indian Uses and Traditional Practices** under Alternative A, the BLM would follow the practices described above in the section entitled, "Management Guidance Common to All Alternatives." These practices include (1) close day-to-day consultation with the Pueblo de Cochiti, and (2) consultations with other tribes for (a) actions requiring an Environmental Analysis or Environmental Impact Statement, and (b) any situations that require consultation under the Native American Graves Protection and Repatriation Act.

Under Alternative A, the management practices for **Cultural Resources** described above under "Management Guidance Common to All Alternatives" would be in effect. In addition, the BLM would protect known cultural resources by posting antiquities signs, providing educational brochures, and determining the restoration needs for vandalized petroglyphs. New information about previously unrecorded cultural resources would be developed primarily through inventories conducted in support of other BLM actions.

The BLM has assigned **Fire Management** Regime Condition Classes 2 and 3 to the acreages of federal land shown in Table 2-5. Hazardous fuels (vegetative) treatments would be applied to 934 federal acres within these classes. The treatable acres in the Planning Area total approximately 2,236. (Note: Potential treatment areas, which have slopes of 15 percent or less, are displayed on Map 9. Vegetation on private lands would be treated only if these lands were acquired by purchase or exchange, or were managed under Cooperative Management Agreements between the BLM and landowners.)

Lands and Realty would involve a total of approximately 15,635 acres of surface ownership (5,089 federal and 10,546 desirable for acquisition, including 521 state and 10,025 private). The 5,089 acres of federal surface would be managed under decisions outlined in the *Rio Puerco Resource Management Plan*. The other 10,546 acres would be managed by owner decision or, where possible, by Cooperative Management Agreement to provide for some level of public use.

Federal mineral (subsurface) ownership within the Monument would include all minerals found beneath 4,565 acres. These minerals would continue to be withdrawn from mineral entry. Beneath the 965-acre Southwest Acquisition, all minerals would continue to be in federal ownership. The North Edgeholding (9,268 acres) would have split mineral ownership, with gold, silver, and quicksilver (mercury) in federal ownership, and all other minerals owned by the surface owner. (Note: Mineral ownership acreage does not correspond with surface ownership acreage.)

Livestock Grazing would no longer be permitted on 4,088 acres of federal rangeland comprising two allotments (refer to Map 10 in the map section). Currently, two permits authorize grazing use within the Monument, a total of 303 animal unit months (AUMs) annually (147 AUMs on the Peralta Allotment and 156 AUMS on the Tent Rocks Allotment).

The following **Recreational Uses** would be allowed on federal lands within the Planning Area: intensive visitation (241 acres), dispersed visitation (4,934 acres), semi-primitive motorized travel (2,070 acres), semi-primitive non-motorized travel (1,032 acres), roaded natural travel (1,987 acres); hiking trail travel (8.03 miles); and visitation, fee demonstration site and other facilities (241 acres—refer also to Table 2-6 for information on recreational uses). Visitation numbers for the year 2000 were reported at 14,600 visits. (The records do not indicate the home state or country of the visitors.)

To provide a variety of recreational opportunities within the Monument and Southwest Acquisition, the BLM has applied the ***Recreation Opportunity Spectrum (ROS) system*** (refer to Appendix E). This system is based on criteria for remoteness, social and managerial setting. Using the system, one of three classes is assigned to a given zone to classify some aspects of the recreational opportunities that may occur there. The classes and zones for Alternative A are shown in Table 2-7 and on Map 11 (in the map section). (Note: The BLM will develop an activity-level plan after managers select an alternative for managing the Monument and other federally owned land. Specific proposed actions to assist in implementing the following RMP-level decisions and the objectives of the BLM's outdoor recreation program will be identified at that time.)

BLM Road 1011/Forest Road 266 serves as a base to identify a ***"roaded natural" (RN) buffer zone*** of 1,987 acres or 39 percent of the Monument and Southwest Acquisition. Along this "better than primitive" road and buffer zone, visitors would have a greater opportunity for interaction with other users, and would be influenced by the sights and sounds of humans and vehicles in a zone where less noise-sensitive developments and use occurred. Primitive recreation (that not dependent on developed facilities and motorized vehicles) would not be as

TABLE 2-2

STATUS OF ROAD SEGMENTS IN THE MONUMENT UNDER THE ALTERNATIVES

Segment Number [a]	Length (miles)	Type [b]	Status Under Alternatives		
			A	B	C
100	.70	Primitive road	Open	Closed	Open
100A	1.00	Primitive road	Open	Closed	Open [c]
100B	.40	Primitive road	Open	Closed	Closed
100C	.30	Primitive road	Open	Closed	Closed
100D	.10	Primitive road	Open	Closed	Closed
100E	.10	Primitive road	Open	Closed	Closed
100F	.30	Primitive road	Open	Closed	Open
101	.80	Primitive road	Open	Closed	Closed
101A	1.50	Primitive road	Open	Closed	Closed
101B	.20	Primitive road	Open	Closed	Closed
101C	.10	Primitive road	Open	Closed	Closed
102	.90	Primitive road	Open	Limited [d]	Open
102A	.80	Primitive road	Open	Closed	Closed
102B	.90	Primitive road	Open	Closed	Closed
102C	.20	Primitive road	Open	Limited [d]	Open
102D	.10	Primitive road	Open	Limited [d]	Open
103	.70	Primitive road	Open	Closed [e]	Closed [e]
103A	.20	Primitive road	Open	Closed	Closed
103B	.20	Primitive road	Open	Closed	Closed
103C	.20	Primitive road	Open	Closed	Closed
103D	.30	Primitive road	Open	Closed	Closed
103E	.10	Primitive road	Open	Closed	Closed
104	.40	Primitive road	Open	Closed	Closed
104A	.50	Primitive road	Open	Limited [d]	Closed
105	.05	Primitive road	Limited [d]	Open	Limited [d]
106	.10	Resource road	Open	Closed	Closed
1011 (also known as Forest Service Road 266)	5.90	Collector road	Open [f]	Open [f]— paved to lower parking area	Open [f]— paved to lower parking area
1011A	1.00	Resource road	Limited [d]	Limited [d]	Limited [d]
1011B	1.50	Resource road	Open	Limited [d]	Limited [d]

Total Miles of Roads

Road Access Designation	Alt. A	Alt. B	Alt. C
Open	24.20	5.95	9.50
Closed	0	11.50	10.40
Limited	1.05	7.80	5.75

Notes: [a] Refer to Maps 6, 7 and 8 (in the map pocket) for segment location.

[b] Refer to the Glossary for a definition of these road types.

[c] Open with .4 mile of newly constructed road.

[d] Road segment limited to authorized or emergency use only.

[e] Proposal is to convert road segment to foot trail only, for use w/small developed parking area & trailhead @ junction off BLM Road 1011.

[f] Road would have different hours of operation, summer & winter, & be closed seasonally in T. 17 N., R. 4 E., Sec. 30 for fire protection.

TABLE 2-3

STATUS OF ROAD SEGMENTS IN THE SOUTHWEST ACQUISITION UNDER THE ALTERNATIVES

Segment Number [a]	Length (miles)	Type [b]	Status Under Alternatives		
			A	B	C
107	.4	Resource	Open	Limited [c]	Closed
107A	.6	Primitive	Open	Limited [c]	Limited [c]
108	1.7	Primitive	Open	Closed	Closed
108A	.2	Primitive	Open	Closed	Closed
108B	.2	Primitive	Open	Closed	Closed
109	.9	Resource	Open	Limited [c]	Limited [c]
1011C	1.7	Resource	Open	Limited [c]	Limited [c]

Notes: [a] Refer to Maps 6, 7 and 8 (in the map pocket) for segment location.
[b] Refer to the Glossary for a definition of these road types.
[c] Road segment limited to authorized or emergency use only.

important, but visitors would still have an opportunity to interact with the natural environment.

A ***"semi-primitive motorized" (SPM) setting*** would be provided on 2,070 acres or 41 percent of the Monument and Southwest Acquisition. Within this setting, visitors would experience an environment with motorized trails and primitive roads offering more challenge and self-reliance on driving skills. A moderate opportunity would exist for inter-party contact, and site visitor management facilities and controls would be limited and more rustic. Recreational visitation and activities associated with motorized vehicle use would be on a total of 4,057 acres or 80 percent of the Monument and Southwest Acquisition.

The remaining 1,032 acres or 20 percent of the Monument and Southwest Acquisition has been zoned to provide a ***"semi-primitive non-motorized" (SPNM) setting***. Here visitors would have the lowest possibility of encounters or interactions with other visitors in a physical setting that is predominantly natural or appears natural. They would have the opportunity to participate in non-motorized types of recreational activities distant from the sights and sounds associated with motorized vehicles. Here access and travel would be non-motorized on trails or cross-country.

To assist in providing recreational opportunities and access to public land resources while providing protection, the BLM through a previous land use plan designated the 5,089 acres within the Monument and Southwest Acquisition as a ***limited off-road/off-highway vehicle (ORV/OHV) area***. Under this alternative, motorized vehicle use would continue to be limited to existing roads and trails. On the federal lands within the Monument and Southwest Acquisition, 25.25 miles of roads have been identified, and 24.2 miles of those would be available for use by motorized vehicles. Of the total identified, 5.9 miles are classified as "collector roads", 5.6 as "resource" roads and 13.75 miles as "primitive" roads (refer to the Glossary for definitions). A total of .05 miles of "primitive" road and 1 mile of "resource" road would be limited to authorized or emergency use only. No roads have been administratively closed, but use has been discouraged on many, and several receive little or no use because of their poor condition. Only BLM Road 1011/FS Road 266 would be scheduled to receive routine maintenance.

The limited ORV/OHV designation would not apply to ***other modes of transportation*** providing access to the public lands. Mountain bikes and other forms of mechanized travel were not addressed in previous plans. Mountain bike and equestrian use within the Monument and Southwest Acquisition would continue to be discouraged because of user conflicts and land limitations. Under Alternative A, visitors using mountain bikes would be directed to use only the primary access that traverses the Monument

TABLE 2-4

STATUS OF TRAIL SEGMENTS IN THE MONUMENT AND SOUTHWEST ACQUISITION UNDER THE ALTERNATIVES

Segment Number [a]	Length (miles)	Current or Past Use	Proposed Use	Status Under Alternatives		
				A	B	C
T1	1.600	National Recreation Trail	Same—hiking	Open	Open	Open
T2	.700	National Recreation Trail	Same—hiking	Open	Open	Open
T3	.400	Recreation trail	Same—hiking	Closed	Closed	Closed
T4	.025	Parking lot trail	Same—hiking	Open	Open	Open
T5	.200	Possibly used for Civilian Conservation Corps camp (1933-42)	Hiking	Open	Limited [b]	Open
T6	.300	Primitive trail—possibly used by livestock	Hiking	Open	Closed	Open
T7	1.100	Pack trail	Hiking & research	Open	Closed	Open
T8	1.300	Cañada Camada trail	Hiking	Open [c]	Open [c]	Open [c]
T9	.300	Canyon bottom access —Peralta Canyon	Hiking	Open	Open	Open
T10	.100	Pack trail	Hiking	Open	Closed	Open
L1	.600	Livestock trail	Hiking & equestrian use	Open	Open [d]	Open [d]
L2	.400	Livestock trail	Hiking	Open	Open	Open
L3	1.400	Livestock trail through wash	Hiking & equestrian use	Open [e]	Open [e]	Open [e]
E1	.900	Does not yet exist —proposed new trail	Hiking & equestrian use	Does not exist	Open & develop	Open & develop

Total Miles of Trails			
Trail Access Designation	**Alt. A**	**Alt. B**	**Alt. C**
Open	8.03	7.23 [f]	8.93 [f]
Closed	0.40	1.90	0.40
Limited	0	.20	0
Totals	8.43	9.33	9.33

Notes:
[a] Refer to Maps 6, 7 and 8 (in the map pocket) for segment location.
[b] Limited to authorized or emergency use only.
[c] Authorized—proposal is to improve to standards required under Americans with Disabilities Act.
[d] Proposal is to assess segment for future use as hiking & equestrian trail.
[e] Proposal is to maintain present standard & assess for hiking & equestrian use.
[f] Includes 3.5 miles of hiking trails & .7 mile of road (#103) to be converted to hiking trail, plus .9 mile of a new trail segment (E1) to be developed for hiking & equestrian use.

TABLE 2-5

EXISTING FIRE REGIME CONDITION CLASSES WITHIN THE PLANNING AREA
(acres)

Fire Regime Condition Class	BLM		State	Private		Total Acreage
	Monument	Southwest Acquisition		Inholding	Cañada de Cochiti	
2	3,709	965	514	586	8,122	13,896
3	415	0	7	171	1,146	1,739
Total Acreage	4,124	965	521	757	9,268	15,635

and Southwest Acquisition, BLM Road 1011/FS Road 266. Equestrian use would continue to be authorized by permit on a case-by-case basis.

In the Monument and Southwest Acquisition, the BLM would continue to apply ***rules of conduct*** to protect public lands, resources and the public (as established at Title 43 of the Code of Federal Regulations, Subpart 8365). In 1996, supplemental rules established that the occupancy and use of the Monument was to occur during the daytime only. The BLM would continue to emphasize ***day-use activities***. Camping and overnight occupancy would be prohibited within the Monument and Southwest Acquisition. ***Intensive recreational visitation and use*** would occur on approximately 241 acres, including areas near special geologic features. Within this intensive recreational visitation zone, the BLM has focused on providing recreational facilities and services. Existing facilities would be maintained. The other 4,848 acres would continue to be used for ***dispersed recreation*** with no BLM-built recreational facilities (except as needed for resource protection, visitor health and safety).

All recreation visitors are expected to obtain a ***recreation fee permit***. The area is a ***standard amenity fee site*** originally authorized by the Omnibus Consolidated Rescissions and Appropriation Act of 1996 (Public Law 104-134). The BLM would continue to collect, retain, and reinvest collected fees at this site. To assist in fee collection and site maintenance, the BLM entered into a ***Cooperative Management Agreement with the Pueblo de Cochiti*** in 1997. The two parties also established an Inter-Governmental Agreement in 2000 to ensure ***public access to the Monument and Southwest Acquisition*** on Tribal Road 92 and BLM Road 1011/FS Road 266. Through an Assistance Agreement with Sandoval County and help from the Cochiti Tribe, the BLM would continue to have this route maintained for public access.

The BLM would continue to require ***special-use permits for all research and educational activities***. The agency would evaluate the applications to consider whether (1) the proposed research or educational activity could be permitted in a manner consistent with protecting the Planning Area's resources, and (2) the methods proposed were the minimum needed to achieve the desired research objectives. Requests for exceptions to this process would be considered.

In previous land use plans, the BLM designated the Monument as an ***Area of Critical Environmental Concern (ACEC)***. ACEC management requires protection to prevent irreparable damage to the identified values. Under Alternative A, the agency would continue to use ***interpretive methods*** (e.g., signs, brochures, kiosks, and on-the-ground presence) to enable visitors to the Planning Area to understand and appreciate its resources. On-the-ground presence has been enhanced through assistance from the Pueblo de Cochiti under the Cooperative Management Agreement mentioned above, which would continue.

TABLE 2-6

ELEMENTS OF RECREATIONAL USE IN THE PLANNING AREA UNDER THE ALTERNATIVES

Element	Alternative A	Alternative B	Alternative C	Comments
Intensive visitor use area/fee site	241 acres around National Recreation Trail & Scenic Overlook—existing facilities retained (Note: Drinking water available in or near Monument.)	241 acres around National Recreation Trail & Scenic Overlook—existing facilities retained (Note: Drinking water available in or near Monument.)	280 acres around National Recreation Trail & Scenic Overlook—existing facilities retained; w/new facilities in NE part of Monument (Note: Drinking water available in or near Monument.)	Day-use visitor facilities & services provided (fee site includes areas w/ special geologic features)
Dispersed visitor use area	4,848 federal acres—BLM would work w/private landowners to assist in preventing trespass	4,848 federal acres—BLM would work w/private landowners to provide additional recreation opportunities, & to assist in preventing trespass	4,809 federal acres—BLM would work w/private landowners to provide additional recreation opportunities, & to assist in preventing trespass	No BLM-built visitor facilities provided (except as needed for resource protection, visitor health & safety)
Collector roads	5.9 miles	5.9 miles	5.9 miles	(Refer to Table 2-2 also.)
Resource roads	4.6 miles	0 miles	0 miles	(Refer to Table 2-2 also.)
Primitive roads	13.7 miles	.05 miles	3.2 miles	(Refer to Table 2-2 also.)
Roads open to public use by motorized vehicles	24.2 miles (existing roads)	5.95 miles (designated roads)	9.5 miles (designated roads)—includes alternative access road (1.4 miles) on NE side of Monument	
Roads limited to authorized or emergency use only	1.05 miles	7.8 miles	5.75 miles	
Roads closed	0 miles	11.5 miles—includes .7 mile converted to hiking use	10.4 miles	

TABLE 2-6 (concluded)

Element	Alternative A	Alternative B	Alternative C	Comments
Hiking trails	6.03 miles	4.33 miles	6.03 miles	(Refer to Table 2-4 also.)
Hiking/equestrian trails (combined)	2 miles	2.9 miles	2.9 miles	(Refer to Table 2-4 also.)
Mountain bike use	Allowed on BLM Road 1011 only*	Same as under Alternative A	Allowed on designated public travel routes	*When open to public use (refer to Table 2-2)
Equestrian use (dispersed)	Authorized by permit on case-by-case basis	Authorized by permit on case-by-case basis, on federal lands south & west of BLM Road 1011	Same as under Alternative A	
Research & educational activities	Authorized by special-use permit on case-by-case basis	Same as under Alternative A	Same as under Alternative A	
North Edgeholding (Cañada de Cochiti property)	Part of Planning Area	• Part of Planning Area (if acquired) • May be closed to general visitation until resources assessed (assessment not to exceed 2 years' duration) • Guided tours may be provided in interim	• Part of Planning Area (if acquired) • May be closed to general visitation until resources assessed (assessment not to exceed 2 years' duration) • Guided tours may be provided in interim • May require reservations to limit visitor numbers • BLM to establish photo-monitoring system for resource protection	

TABLE 2-7

RECREATION OPPORTUNITY SPECTRUM CLASSIFICATIONS FOR THE MONUMENT AND SOUTHWEST ACQUISITION UNDER THE ALTERNATIVES

ROS Class	Alt. A—Acres (% of Area)	Alt. B—Acres (% of Area)	Alt C—Acres (% of Area)	Type of Setting & Visitor Experience
Roaded Natural (RN—buffer zone based around BLM Road 1011/Forest Service Road 266, a "better than primitive" road)*	1,987 ac. (39%)	1,987 ac. (39%)	2,895 ac. (57%)	• Greater opportunity for interaction w/other users • Influenced by sights & sounds of humans & motorized vehicles • Zone w/less noise-sensitive development & use • Primitive recreation (not dependent on developed facilities & motorized vehicles) not as important • Interaction w/natural environment possible
Semi-Primitive Motorized (SPM)*	2,070 ac. (41%)	2,048 ac. (40%)	1,415 ac. (28%)	• Moderate opportunity for inter-party contact • Access & travel on motorized trails & primitive roads (not constructed to engineering standards, unmaintained, w/low volume of traffic) • More challenge & self-reliance on driving skills in vehicles w/high clearance (not primarily intended for highway use) • Visitor management facilities & controls limited, more rustic
Semi-Primitive Non-Motorized (SPNM)	1,032 ac. (20%)	1,054 ac. (21%)	779 ac. (15%)	• Greater opportunity for solitude; lowest possibility of encounters/interactions w/other visitors • Distant from sights & sounds of motorized vehicles • Access & travel non-motorized, on trails or cross-country • Physical setting predominantly natural/natural appearing
*Total acres available for motorized vehicle use (RN & SPM zones)	4,057 ac. (80%)	4,035 ac. (79%)	4,310 ac. (85%)	

The BLM has completed a partial survey of Section 33, T. 17 N., R. 5 E. that addresses the eastern and southern boundaries of the private inholdings within the Monument. The survey has confirmed that the National Recreation Trail is located on public land. The BLM will continue to (1) post signs informing the public of the existence of the private inholdings, and (2) work with private landowners on issues such as unauthorized visitor use; obtaining permission to enter private land for scientific study; scenic and other easements and land acquisition; fencing and additional signing.

(Note: ***Drinking water*** would be available in or near the Monument.)

Riparian Areas—None of these exists on federal lands within the Monument. Although 2.05 miles of the Peralta Canyon stream channel lies within the Monument boundary (refer to Map 12 in the map section), all water flows there are intermittent, and no true riparian characteristics (e.g., vegetation, wildlife) are present. However, upstream several miles, the stream is intermittent to perennial and contains a population of native cutthroat trout, so it is likely that it was once continuous to the Rio Grande.

Under Alternative A, B or C, the BLM would initiate a riparian development monitoring program to determine the surface and subsurface hydrologic characteristics for the area. The agency would install an exclosure along the channel to determine its potential for natural revegetation. Prescribed fire and herbicides would be used to reduce the competition for water by the existing shrubs. If riparian vegetation or hydrology developed in the future, the agency would pursue a more intense riparian restoration program.

The major components of the riparian monitoring and initial restoration plan would be the following.

- Monitoring the Peralta Canyon stream channel for riparian development. The agency would install the following items.
    - ♦ Alluvial water table wells (on the upper, middle, and lower channel segments);
    - ♦ Stream gauge stations (on the upper and lower segments);
    - ♦ A 3-acre exclosure along the stream channel.
- Applying prescribed burning to parts of the Peralta Canyon bottom to reduce the cover of shrub species. (This may be followed by herbicide treatment on re-sprouting shrub species.)
- Seeding and planting areas lacking grass and forb species.
- If riparian conditions developed in the future, making additional plantings with cottonwoods, willows, and other riparian plant species.
- Pursuing cooperative agreements with willing landowners to manage riparian-wetland areas located on private inholdings within the Monument.

The **Social and Economic Conditions** related to the management of the Planning Area would continue to include part-time employment for three to four persons, and annual income of up to $50,000 to the Cochiti Pueblo. Some tourism dollars would help the local and regional economy, although the amount would be small because few tourists stay in the area.

Special Geologic Features are a value identified in the ACEC designation, and the BLM focused on a small part (167 acres) of the lands having these values in establishing the Tent Rocks Recreation Area. Interpretation and enjoyment of these features (on 167 acres and 8.03 miles of trails) would occur in the Planning Area under Alternative A.

Vegetation and Woodland Management would be done as needed in areas that were accessible based on the slope of the land, transportation routes, and land ownership. The BLM would apply vegetation treatments (e.g., prescribed fire or mechanical, chemical or biological methods) to move Monument lands toward the desired future condition of Fire Regime Condition Class 1 (refer to Map 9 for the location of potential treatment areas). Though desirable for treatment, some areas would be inaccessible because of their steep slopes, as shown in Table 2-8.

In applying these treatments, the BLM would use Best Management Practices as defined in various agency handbooks and manuals cited in the *Fire and Fuels Resource Management Plan Amendment and Environmental Assessment for BLM Lands in New Mexico and Texas* (USDI, BLM 2004b—refer to Appendix C for a table taken from that document that lists these practices). The agency would develop Cooperative Management Agreements with nonfederal landowners to follow consistent management practices on their land.

Visual Resources Management Class II would continue to guide development on the 5,089 federal acres within the Monument and Southwest Acquisition. If brought under Cooperative Management Agreement(s), nonfederal land also would be managed under the Class II guidelines. The primary objectives of management under this class are to retain the existing character of the landscape and to prevent changes from authorized uses and management actions that will attract attention.

Few **Water Resources** have been developed on federal lands within the Monument. A plan exists to develop groundwater for drinking within the Monument, although previous attempts to develop this source have been unsuccessful. Groundwater has been developed on private land within the Monument, and the BLM would seek a Cooperative Management Agreement to use that water source.

TABLE 2-8

ACRES IN THE PLANNING AREA ACCESSIBLE FOR WOODLAND AND VEGETATIVE TREATMENTS

	Treatable Acres [a, b]		Untreatable Acres	
Land Ownership	**FRCC-2**	**FRCC-3**	**FRCC-2**	**FRCC-3**
BLM Monument	265	345	3,444	70
Other	324	0	641	0
State	3	7	511	0
Private Inholding	0	171	586	0
North Edgeholding (Cañada de Cochiti)	716	405	7,406	741
Total Acres	1,308	928	12,588	811

Note: [a] FRCC—Fire Regime Condition Class (refer to the Glossary).
[b] Potential treatment areas are shown on Map 9 for Alternative A.

Surface water development consists of two small ponds (dirt tanks) in Section 5 (T. 16 N., R. 5 E.) and Section 31 (T. 17 N., R. 5 E.), and a water collector and tank that are also in Section 31. These water structures would be used by wildlife.

Under any alternative, the altered streambed upstream from the visitor area would be renovated so the natural drainage pattern was restored. At present, a small mound of channel bed materials diverts storm flows out of the natural drainage course and sends them toward the parking lots and visitor area. The renovation would reduce the volume of flood water that reached these areas.

Wildlife Habitat Management would be part of Planning Area management. The federal portion of 5,284 acres of woodlands and savanna would be managed to continue to provide habitat for the numbers of species shown in Table 3-13 in Chapter 3. Numbers of species on the federal portion of 246 acres of sideslopes and cliffs are also shown in this table.

Alternative B—Proposed Action (Agency Preferred Alternative)

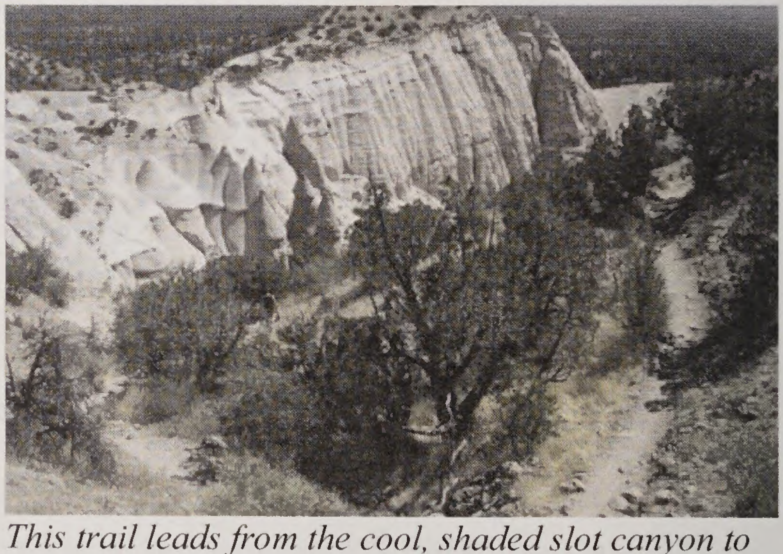
If BLM managers selected Alternative B, the Proposed Action, the agency's focus would be to make resource allocations that would resolve the resource use issues or conflicts and management concerns associated with the Monument, while complying with Presidential Proclamation 7394 and current BLM policies, initiatives, and guidance. The agency would more intensively manage recreational use through additional development of facilities for (1) visitor use and enjoyment of the area; (2) resource protection; (3) visitor health and safety needs; (4) meeting land health standards; (5) research and environmental education opportunities that would be in compliance with the proclamation; and (6) protecting American Indian use areas and traditional cultural practices.

The proclamation identified the area as "a remarkable outdoor laboratory, offering an opportunity to observe, study, and experience the geologic processes that shape the natural landscapes, as well as other cultural and biological objects of interest." It set apart the area known as the Kasha-Katuwe Tent Rocks National Monument and reserved it to protect the objects identified above, on all lands and interest in lands owned or controlled by the United States within the Monument boundaries. The federal land and interests in land that were reserved consist of approximately 4,124 surface acres, which is the smallest area compatible with proper care and management of the objects to be protected. The proclamation also includes 4,565 acres of mineral ownership within the prescribed boundary. (Refer to Appendix A for a copy of the proclamation.)

The following resource uses and programs would be managed in the same way under Alternative B as under Alternative A: water resources, and vegetation and woodland management. Only the resources or critical elements discussed below would be managed and/or used differently under Alternative B than under Alternative A.

Access and Transportation— Approximately 25.25 miles of vehicle transportation routes would exist on the Planning Area's federal lands under this alternative. About 5.95 miles of the vehicular routes in the area would be open to public use, 11.5 miles would be closed, and 7.8 miles would be limited to authorized and emergency use only.

Of the 9.33 miles of trails on federal land, about 1.9 miles would be closed and 7.23 miles would be open to hiking and/or equestrian use [including .7 mile of primitive road (#103) converted to a trail, and .9 mile of new trail] under Alternative B. [Refer to Map 7 (in the map pocket) for road and trail segment locations and Tables 2-2, 2-3 and 2-4 for segment mileages, status and proposed uses.]



This trail leads from the cool, shaded slot canyon to the sunny Vista Point overlook.

BLM routes designated on federal lands within the Planning Area would include 5.9 miles of a collector road (BLM Road 1011), 5.5 miles of resource roads, and 2.35 miles of primitive roads. (All of the resource roads and primitive roads would be limited to authorized and emergency use only—refer to the Glossary for road definitions. Miles of road that would be used in areas potentially under Cooperative Management Agreements are unknown.)

For **American Indian Uses and Traditional Practices** under Alternative B, the BLM would follow the consultation practices described above for Alternative A. Agency developments and recreation management policies would be oriented, in part, toward discouraging visitor use in sensitive areas identified by American Indians. In addition, with appropriate advance notice, the BLM would consider brief, temporary closure of all or portions of the Monument and Southwest Acquisition to ensure privacy for traditional uses.

If the BLM acquired the North Edgeholding, the agency initially would close the property to public entry except access (1) on existing public roads and (2) with prior authorization from the Rio Puerco Field Office Manager. After consulting with potentially affected American Indian tribes and doing resource data inventory (not to exceed 2 years' duration), the agency would open the area with appropriate restrictions.

Under Alternative B, the BLM would follow the procedures described above under "Continuing Management Guidance Common to All Alternatives" for **Cultural Resources**. However, more stringent inventory requirements would be in effect, with larger buffers and Class III (intensive) inventory in all questionable cases. For example, the following management measures would apply.

Access and Transportation—The 1.05 miles identified for easement acquisition along BLM Road 1011 have already been inventoried for cultural resources. The agency has inventoried 5.3 miles of roads open to public access. Before any further maintenance was done, the BLM would inventory the remaining .65 miles of "open" roads, as well as 7.8 miles of roads limited to authorized and emergency use only, and 11.5 miles of "closed" roads (which would need to be inventoried before rehabilitation and closure). Inventory needs for 7.23 miles of "open" trails are discussed below under "Recreation." Of the 1.9 miles of trails to be closed under Alternative B, .18 miles have been surveyed, leaving 1.72 miles to be surveyed before any rehabilitation work was done.

Lands and Realty—If the BLM acquired the North Edgeholding, the agency initially would close it to public entry except access (1) on existing public roads and (2) with prior authorization from the Rio Puerco Field Office Manager. This restriction would be lifted after an assessment of cultural resources was made, and measures implemented to mitigate potential adverse effects.

Recreation—The BLM would address the secondary effects of recreational use on cultural resources by requiring inventory of expanded buffer areas around recreational developments that would accommodate pedestrian activities such as hiking, picnicking and sightseeing. Cultural resource inventories for parking areas, scenic viewing areas, picnic areas and similar developments would include a 100-meter-wide buffer. For hiking trails, a 30-meter-wide buffer would be inventoried, resulting in examination of a 60-meter-wide corridor. Approximately 1.81 miles of "open" trails have already been inventoried, and survey of the remaining 6.22 miles will be completed by the end of September 2008.

Vegetation Treatment—In sensitive settings, these types of treatments would be subject to Class III inventory if the use of fire or any form of surface disturbance was proposed, including off-road vehicle use and dragging of slash. Based on current information, alluvial valley bottoms (soil type 300) and slopes greater than 20 percent are not considered sensitive. Mesa tops and ridge tops are sometimes covered by extensive artifact scatters, which could limit some forms of vegetative treatment.

Water Resources—Water wells are located on inholdings or edgeholdings. If these lands were acquired, the BLM would do cultural resource inventories to ensure that no damage would occur in association with well use or maintenance.

General—Aside from the measures described above, no special priority would be given to proactive inventory, protection, or interpretation of cultural resources in the Monument and Southwest Acquisition. Instead, proposals for proactive cultural resource management projects would be based on an evaluation of the importance of the resource, the nature and immediacy of threats to the resource, public demand for interpretation, the cost of the proposed remedy, and the availability of funding. Decisions about funding such projects would be made in the context of the need for similar projects throughout the Albuquerque District.

Activities that would involve excavation or collection of cultural materials would be discouraged, and would ordinarily be considered only when such materials faced an immediate threat. Archeological resources within the Monument and Southwest Acquisition would be available for scientific study that would not involve excavation or collection of cultural materials. Exceptions to this policy would be made only after extensive consultation with all concerned American Indian tribes.

Fire Management would conform to the *Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas* (USDI, BLM 2004b). Lands in Fire Regime Condition Classes 2 and 3 would be treated to move them toward Class 1 (refer to Map 13 in the map section). Also in accordance with the RMP Amendment, the BLM would use Best Management Practices (refer to Appendix C). Treatments would be prioritized based on the percent slope, FRC Class, access, and ownership of the areas to be treated. Only areas having slopes less than 15 percent (2,236 acres in the Planning Area) would be treated.

Lands and Realty would involve approximately 15,635 acres of surface and mineral ownership, including the nonfederal lands recommended for acquisition. In the short-term, surface ownership would be 5,089 acres federal, 521 acres state, and 10,025 acres private. The BLM would manage the 5,089 acres of federal surface under the RMP decisions contained in this document. The other 10,546 acres would be managed by owner decision or, where possible, by Cooperative Management Agreement to provide for some level of public use. If a willing seller was available in the long term, the BLM would seek to acquire the North Edgeholding to complement management of Monument values.

Federal ownership for all minerals beneath the Monument would include 4,565 acres. This acreage has been withdrawn from mineral entry, by conditions of the proclamation. (Note: Mineral ownership acreage does not correspond with surface ownership acreage.) As other minerals were acquired within the Monument, they would also be withdrawn from mineral entry under the proclamation.

All minerals under the 965-acre Southwest Acquisition would continue to be in federal ownership. The North Edgeholding (9,268 acres) would have split mineral ownership, with gold, silver, and quicksilver/mercury in federal ownership and all other minerals owned by the surface holders. Under Alternative B, the BLM would seek to acquire these mineral rights along with the surface, and to have the minerals withdrawn, subject to valid existing rights.

Under the requirements of Presidential Proclamation 7394, **Livestock Grazing** would be discontinued in the Monument unless it would advance the purposes of the proclamation. Under Alternative B, BLM managers could permit seasonal, short-duration, non-renewable opportunities for domestic livestock grazing to meet specific ecological objectives. This type of temporary authorized use could include integrated weed management (e.g., grazing of saltcedar and other invasive or noxious plants by livestock, intense grazing of downy brome in early spring), grazing to reduce fine fuels, intense livestock presence and supplemental feeding (not rangeland grazing) to produce “hoof impact” and distribute litter and seeds into the disturbed soil surface.

As part of these short-duration permits, the agency would specify terms and conditions for grazing on the Monument to meet ecological and vegetative resource objectives [e.g., number and kind of livestock, period of use, percent allowable use; desired amount of residual vegetation (stubble heights) to be left post-grazing, specified areas for grazing or nonuse for monitoring, herding of animals]. Any proposed grazing studies must improve the knowledge and understanding of the Planning Area, and sustain the purposes of the proclamation.

Federally owned range improvement projects that could not effectively be converted to Planning Area uses would be removed. Privately owned range improvements would be removed by the permittee or purchased by the BLM, at fair market value, if they could be converted to Planning Area use. Areas closed to grazing would be fenced.

The following **Recreational Uses** would be allowed within the Planning Area: intensive visitor use (241 acres), dispersed visitor use (4,848 acres), semi-primitive motorized use (2,048 acres), semi-primitive non-motorized use (1,054 acres), roaded natural use (1,987 acres), combined hiking and equestrian trail use (2.9 miles), and designated hiking trail use (7.2 miles). The visitation, fee demonstration site and other facilities are within the intensive use acreage (241 acres—refer to Table 2-6).

For the following recreational elements, BLM management of recreation in the Planning Area under Alternative B would be the same as that applied to the Planning Area under Alternative A.

- Use of the ***ROS system*** to divide the area into the three visitor experience zones discussed above (with slightly different acreages, as shown in Table 2-7, and on Map 14 in the map section);
- Application of the ***rules of conduct*** for the protection of public land resources and visitors (as established at 43 CFR 8365);
- ***Emphasis on day use*** and prohibition of camping or overnight occupancy;
- Management of ***intensive visitation and use*** on 241 acres around the National Recreation Trail, scenic overlook, and special geologic features;
- Management of ***dispersed visitation and use*** on the remaining 4,848 acres, with no BLM facilities being built, except as needed for resource protection, visitor health and safety;
- ***Collection, retention and reinvestment of collected fees*** at this standard amenity site;
- The agency would also ***continue the Cooperative Agreement with the Pueblo de Cochiti for assistance*** in fee collection;
- Maintenance of BLM Road 1011/FS Road 266 and Tribal Road 92 through the Inter-Governmental Agreement with the Pueblo de Cochiti to allow ***continued public access*** to and through the Planning Area. The BLM, the pueblo and Sandoval County would be involved in this maintenance;
- Issuance of ***Special Recreation Permits*** for commercial and noncommercial recreation-related uses (e.g., group activities, commercial recreational tours), and for any other uses for which the agency determines a permit is needed to support the recreation management objectives of the area and serve the public interest;
- Issuance of ***special-use permits for all research and educational activities*** on a case-by-case basis;
- Use of ***interpretive tools*** (e.g., signs, kiosks, brochures, websites, and on-the ground presence) to help protect the objects of cultural, biological and geologic interest by enabling visitors to understand and appreciate these resources.

Under Alternative A, ***motorized vehicle use*** would continue to be limited to existing roads and trails. Under Alternative B, the BLM would change the designation of the Planning Area as an area with "ORV/OHV use limited to existing roads and trails" to "ORV/OHV use limited to designated roads and trails." This change would reduce the amount of mileage available for public use within the Planning Area, as identified in the "Access and Transportation" section of this alternative. Approximately .7 of a mile of an existing road would be closed to motorized use and converted to pedestrian use. This would add to the existing trail system within the Planning Area that provides access to recreation resources. ***Mountain bikes*** and limited forms of motorized transportation (except all-terrain vehicles and dirt bikes) would be allowed on the primary access road (BLM Road 1011/FS Road 266) through the Planning Area when the road was open to public use. ***Equestrian use*** would be authorized on a case-by-case basis and directed to federal lands in the Monument and Southwest Acquisition that are south and west of BLM Road 1011/FS Road 266. BLM Road 1011/FS Road 266 and designated travel routes would be scheduled to receive maintenance.

The BLM would maintain existing ***visitor facilities*** in the intensive use area, and build new ones as needed for resource protection, and visitor health, safety and convenience. The agency would also work with other landowners in the Planning Area to (1) provide additional opportunities where appropriate to view the special geologic features and scenic values, and expand recreational use of the area, as well as (2) assisting in the prevention of trespass in unwanted areas on nonfederal lands.

Visitors enjoy lunch at one of the many picnic tables.

The agency would make ***drinking water*** available in or near the Monument for visitors. Various alternative methods would be considered, including the following. (Note: Water pipelines would probably be buried adjacent to BLM Road 1011 to reduce surface disturbance.)

1. Drilling a well with a well house that would include treatment facilities, a water pipeline delivery system, a storage tank with at least a 12,000-gallon capacity, and frost-free hydrants;
2. Using an existing well on Pueblo de Cochiti tribal land, state or private land. This would require:
   a. Authorization through agreements, land exchange or acquisition;
   b. Testing for flow and water quality; and
   c. Installation of water pipelines.
3. Selling bottled water.

The agency would also ***continue the Cooperative Management Agreement with the Pueblo de Cochiti for assistance*** in providing an on-the-ground presence, until further resource studies are completed. The BLM may close the North Edgeholding to general visitation, providing ***guided tours*** in the interim.

Riparian Areas—Under Alternative B (Proposed Action), the BLM would attempt to acquire the state and private inholdings in the Planning Area. If the acquisitions were completed, the agency would manage an additional 1.62 miles of the Peralta Canyon stream channel, along with three windmill wells and less than 5 additional acres (refer to Map 12 in the map section).

Under this alternative, the BLM would establish a program to monitor the magnitudes and durations of the flows through 2.05 miles of Peralta Canyon on federal land in the Monument using the following means: (1) alluvial water table wells (in the upper, middle and lower portions), and (2) stream gage stations (in the upper and low portions). This program would be part of a larger study to determine whether the development of a riparian area along the Peralta Canyon stream channel was possible.

Alongside the channel, the BLM would develop a 3-acre exclosure on federal land to monitor vegetation supported by available water during the runoff season. This would allow agency staff to determine if riparian vegetation may have existed previously over a period of time, and if such vegetation would establish along Peralta Wash through study efforts.

Additional measures would include the following: (1) prescribed fires for parts of the Peralta Canyon stream channel to reduce the cover of shrub species; (2) possibly to be followed by herbicide treatment of re-sprouting shrub species; (3) seeding of areas currently lacking in grass and forb species; and, (4) if riparian conditions developed, making other plantings of cottonwood, willow and other species.

If riparian vegetation became established in the stream channel, and the private inholdings were acquired, the entire riparian habitat within the canyon inside the Monument would be managed as a riparian area. The BLM would then assess the area for properly functioning condition. As studies were ongoing, study areas would be designated as off limits to recreational uses such as hiking and horseback riding alongside the wash to avoid damage to this habitat. If inholdings were not acquired, the agency would pursue Cooperative Management Agreements with willing landowners to protect developed riparian areas located on private land.

(Note: BLM resource specialists have developed a separate Riparian Development Plan for this possible riparian area in the Peralta Canyon stream channel. This document is on file at the Rio Puerco Field Office.)

The **Social and Economic Conditions** attributable to the management of the Planning Area would include part-time employment for 4 to 5 persons and income to the Cochiti Pueblo amounting to $25,000 to $50,000 per year. Some tourism dollars would be spent in the local and regional economy. The size of the area does not encourage long stays and the percentage of out-of-state visitors is low (less than 25 percent in 2002), so this tourism income would be small. Acquired lands would add to the county's entitlement acres, increasing the federal government's payment to Sandoval County in lieu of taxes. (In 2004, this payment to Sandoval County amounted to $1.34 per entitlement acre.)

Special Geologic Features are a value identified in the ACEC designation. The BLM's Tent Rocks Recreation Area focused on a small part (167 acres) of the lands having these values. Interpretation and enjoyment of these features would continue in the Planning Area. Within the Planning Area under Alternative B, the area with these special geologic features would total 2,284 acres, with 8.03 miles of trails (the same mileage as under Alternative A).

Visual Resource Management (VRM) Classes II and III would be used to guide management actions on the public lands within the Planning Area. In areas of intensive recreational use and along the existing primary vehicular route (BLM Road 1011) through the Monument, VRM Class III would be assigned to 1,202 acres that encompass the immediate foreground (¼ mile) surrounding the developed facilities (refer to Map 15). On the Class III lands, activities and structures would attract attention but not dominate the view of the causal observer. Changes would borrow from the basic elements found in the natural features of the surrounding characteristic landscape. VRM Class II would be assigned to 3,887 acres of remaining public lands, where the intent would be to retain the existing character of the landscape by keeping implementation actions from attracting attention.

The BLM would use a contrast rating process to determine a level of contrast acceptable under the assigned VRM class objectives. The contrasts would be measured by comparing the proposed project's basic design elements of form, line, color and texture with those same elements found in the landform, water, vegetative and structural features of the surrounding landscape as observed from considered key observation points. Design principles, techniques and mitigation measures would be applied to minimize visual impacts.

The degrees of contrast are as follows.

- None—The element contrast is not visible or perceived.
- Weak—The element contrast can be seen but does not attract attention.
- Moderate—The element contrast begins to attract attention and dominate the characteristic landscape.
- Strong—The element contrast demands attention, will not be overlooked.

Acquired lands would be inventoried and placed in one of these two classes based on the extent of cultural modifications to the landscape, the need to implement future management actions or install facilities to accommodate customer services, or the need for resource protection and rehabilitation.

Under Alternative B or C, the BLM would implement the following actions to maintain and enhance healthy habitats for **Wildlife** populations within the boundaries of the Planning Area.

- Conduct a complete biotic survey of the area to determine the plant and animal species present, including vascular and non-vascular plants; soil macro- and micro-invertebrates for each soil type; arthropods, mollusks, and crustaceans; and miscellaneous other invertebrates as they become known.
- Conduct breeding bird surveys on a regular and repeating schedule. If populations decline, develop a mitigation plan in coordination with the U.S. Fish & Wildlife Service and the New Mexico Department of Game & Fish (NMDG&F).
- Survey the stream bottom of Peralta Canyon every 3 years for evidence of riparian and wetland development. If such development occurs, pursue a more intensive riparian restoration program with specific actions to protect and promote the development (based on best science). This will also be applied to any springs or seeps discovered.
- Fence the south and west boundaries of the Planning Area and any acquired lands to prevent damage to big-game winter habitat from trespass livestock.
- Coordinate wildlife management activities with the NMDG&F (including but not limited to game species management, hunting regulation; and special-status species management).

Alternative C

If BLM managers selected Alternative C, Adaptive Management, the agency's focus would be to make resource allocations that would resolve the resource use issues or conflicts and management concerns associated with the Planning Area, while complying with Presidential Proclamation 7394 and current BLM policies, initiatives, and guidance. Under this alternative, the BLM would seek to acquire lands with resource values similar or complementary to those of the Monument that would enable the agency to more effectively manage the values of the Monument.

Also under Alternative C, the BLM would monitor uses for which adjustments would likely be needed to ensure land health, resource protection, and safe and enjoyable resource use. The Planning Area has already lost some of its attractiveness and enjoyment for local users because the designation of the Monument has increased visitation from 8,600 users in 1998 to over 50,000 users in 2004. The need to change the management prescriptions would be based on monitoring visitor satisfaction, key species, natural resource conditions that indicated land health, and the condition of objects for which the Monument was designated.

Several resource uses and programs would be managed in the same way under Alternative C as under Alternative B, including: fire management; lands and realty (including mineral ownership); livestock grazing; special geologic features; vegetation and woodland management; water resources; and wildlife habitat management.

Access and Transportation—About 9.5 miles of the vehicular routes in the Planning Area would be open to public use, with 5.75 miles being open for limited use only, and 10.4 miles closed. A total of 8.93 miles of trails on federal land would be open for hiking, equestrian use, and/or research (6.03 miles of foot trails only, and 8.93 miles of combined foot and equestrian trails), with .4 miles of trails closed under Alternative C. [Refer to Map 8 (in the map pocket) for the location of road and trail segments, and to Tables 2-2, 2-3 and 2-4 for segment mileages, status and proposed uses.]

BLM routes designated on federal lands within the Planning Area would include 5.9 miles of a collector road (BLM Road 1011), 5.6 miles of resource roads (of which 5.1 miles would be limited to authorized or emergency use only), and 13.75 miles of primitive roads (of which 3.6 miles would be open). (Refer to the Glossary for definitions of these types of roads.) (Miles of road that would be used in areas potentially under Cooperative Management Agreements are unknown.)

Visitor use would be monitored to determine the need for an expanded road system. About 1.4 miles of new road easement would be negotiated on the northeast side of the Monument (across the North Edgeholding) for an alternative access route into the Monument. The route would extend through the Monument and Planning Area on primitive roads, including approximately .4 mile of new construction. The new access route would connect with BLM Road 1011.

American Indian Uses and Traditional Cultural Practices—Some developments proposed under Alternative C could affect these uses by reducing privacy. However, under this alternative BLM recreation management policies would be oriented, in part, toward discouraging visitor use in sensitive areas identified by American Indians. With respect to traditional uses, other aspects of managing the Planning Area would be the same under Alternative C as under Alternative B.

Under Alternative C, **Cultural Resources** would be managed as described above under Alternative B. Only the lengths of roads and trails to be inventoried would be different.

The following **Recreational Uses** would be allowed within the Planning Area: intensive visitor use (280 acres), dispersed visitor use (4,809 acres), semi-primitive motorized use (1,415 acres), semi-primitive non-motorized use (779 acres), roaded natural use (2,895 acres); hiking and equestrian use on common trails (2.9 miles) and designated hiking trail use (6.03 miles). The visitation, fee demonstration site and other facilities would continue in the intensive use area (280 acres—refer to Table 2-6).

For the following elements, BLM management of recreation in the Planning Area under this alternative would be the same as that applied to the Planning Area under Alternative A.

- Use of the ***ROS system*** to divide the area into the three visitor experience zones discussed above (with slightly different acreages, as shown in Table 2-7, and on Map 16 in the map section);
- Application of the ***rules of conduct*** for the protection of public land resources and visitors (as established at 43 CFR 8365);
- ***Emphasis on day use*** and prohibition of camping or overnight occupancy;
- ***Collection, retention and reinvestment of collected fees*** at this standard amenity site. All visitors would continue to be required to obtain a recreation fee permit. The agency would also ***continue the Cooperative Agreement with the Pueblo de Cochiti for assistance*** in fee collection;
- Maintenance of BLM Road 1011/FS Road 266 and Tribal Road 92 through the Inter-Governmental Agreement with the Pueblo de Cochiti to allow ***continued public access*** to and through the Planning Area. The BLM, the pueblo and Sandoval County would be involved in this maintenance;
- Issuance of ***Special Recreation Permits*** for commercial and noncommercial recreation-related uses (e.g., group activities, commercial recreational tours), and for any other uses for which the agency determines a permit is needed to support the recreation management objectives of the area and serve the public interest;
- Issuance of ***special-use permits for all research and educational activities*** on a case-by-case basis;
- Use of ***interpretive tools*** (e.g., signs, kiosks, brochures, websites, and on-the ground presence) to help protect the objects of cultural, biological and geologic interest by enabling visitors to understand and appreciate these resources. The agency would also ***continue the Cooperative Management Agreement with the Pueblo de Cochiti for assistance*** in providing an on-the-ground presence.
- Providing **drinking water** at the Monument for visitors.

Under Alternative A, ***motorized vehicle use*** in the Planning Area would continue to be limited to existing roads and trails. Under Alternative C, the BLM would classify all acres of federal land as an area where ORV/OHV use is limited to designated roads and trails. Of the identified 25.25 miles of the existing road system, approximately 9.5 miles would be designated for public use with motorized vehicles. To enhance ***recreation access*** to the northeast part of the Monument, alternative public road access would be considered when needed to help disperse visitation, provide visitor service and a quality recreation experience. ***Mountain bikes*** and other forms of mechanized travel would be prohibited off designated travel routes open to the public (i.e., BLM Road 1011 and the new access road proposed to enter the northeast corner of the Monument—refer to Map 8 in the map pocket). No trails would be designated for motorized vehicle use. ***Equestrian use*** would be authorized on a case-by-case basis. BLM Road 1011/FS Road 266, along with other designated roads in the system, would be scheduled for maintenance to protect resources and provide for travelers' safety.

Intensive recreational visitation and use would occur on approximately 280 acres around the National Recreation Trail, scenic overlook, special geologic features, and additional acres associated with proposed new facility development in the northeastern part of the Monument. The possibility of opening an ***additional eastern access route*** (refer to Map 8 in the map pocket) as a means to disperse visitor use over a larger area has been considered and could be implemented without additional planning or NEPA analysis if Alternative C was selected. Approximately 1.4 miles of new road easement would be negotiated in the Planning Area on the northeast side of the Monument and across the North Edgeholding for an alternative access road. This would help to disperse visitors in a larger area, lessen the impacts from the existing crowded environs, and reduce the potential for increased inter-party contact. Other options would also be considered, such as requiring reservations to limit visitor numbers, closing the North Edgeholding to general visitation until further resource studies were completed, or providing guided tours.

Within the intensive recreational visitation zones, the BLM would focus on providing facilities and services to the visiting public for health, safety and resource protection. The remaining 4,809 acres of federal lands in the Planning Area would be used for ***dispersed recreational use*** with no BLM-built facilities except those needed for resource protection or visitor health and safety.

As part of an adaptive management approach, Alternative C would include a ***5-year monitoring and evaluation process***. Two to five photo-monitoring sites would be established within the recreational intensive use area (refer to Map 3 in Chapter 1). These sites would be used to produce a photographic record to be accompanied by a narrative description of the natural resource conditions at these sites twice a year (before Memorial Day and after Labor Day) for 5 years. To determine how the number of visitors and management practices were affecting natural resource condition, this data would be used with that on visitor counts, visitor satisfaction, and climate/precipitation (recorded at least monthly), plus facility and management strategy changes. The results of this monitoring would support management changes required to achieve the recreation objective of maximizing visitor use and satisfaction while minimizing natural resource damage and degradation.

Riparian Areas—Under Alternative C, the BLM would attempt to acquire the nonfederal acres in the Planning Area. If this land was acquired, the agency would manage an additional 1.7 miles of the Peralta Canyon stream channel and a developed spring (refer to Map 12). Under Alternative C, the potential riparian area [if acquired or managed cooperatively with the landowner(s)] would be managed in the same way as under Alternative B.

The **Social and Economic Conditions** attributable to the management of the Planning Area under Alternative C would be the same as those under Alternative B. However, the acquired lands would add to the Planning Area (entitlement) acres and would add to the federal government's payment to Sandoval County in lieu of taxes. The county's 2004 payment amounted to $1.34 per entitlement acre. At this rate, the addition of all acres recommended for acquisition would have the potential to increase the payment by approximately $15,425.

Visual Resources Management
Classes II and III would be used to guide development on public lands within the Monument. In addition to the 1,202 acres of federal land assigned VRM Class III status under Alternative B, VRM Class III would be assigned to an additional 749 acres that make up the newly built vehicle transportation access routes and parking facilities under Alternative C, for a total of 1,951 acres (refer to Map 17 in the map section). On these Class III lands, activities and structures would attract attention but not dominate the view of the casual observer. Changes would borrow from the basic elements found in the natural features of the surrounding characteristic landscape. VRM Class II would be assigned to 3,138 acres of remaining federal land, where the intent would be to retain the existing character of the landscape by keeping implementation actions from attracting attention. The BLM would use the same contrast rating process described above under Alternative B to assess projects on a case-by-case basis.

Acquired lands would be inventoried and placed in one of these two classes based on (1) the extent of cultural modifications to the landscape, (2) the need to implement future management actions for resource protection and rehabilitation, (3) the need to install facilities to accommodate visitor health, safety and customer services, or (4) the need to protect and/or rehabilitate resources.

MONITORING OF THE KASHA-KATUWE TENT ROCKS NATIONAL MONUMENT AND SOUTHWEST ACQUISITION

The BLM would monitor the Monument and Southwest Acquisition to quantify the number of recreational visits, types of recreational activities and use patterns, accomplishment of management objectives, and potential adverse impacts to resources and visitor experiences from use of the area. The results of the monitoring would provide an opportunity to identify actions to protect resources, enhance visitor experiences, and deal with health and safety needs in the area.

The monitoring program may include such actions as:

- Patrolling roads, trails and areas to observe recreation use where it is concentrated;
- Installing trail and road traffic counters and site registers;
- Establishing photo points in critical areas to monitor change; and
- Surveying visitors to better understand their values and expectations while using the area.

Monitoring would help the agency to detect and document natural and human-induced changes in resource conditions and visitor experiences, and offer insights into the effectiveness of resource management policies and objectives. It would also help agency personnel to understand what might be driving the changes requiring intervention (corrective management actions or tactics).

One useful tool would be to develop indicators and standards for monitoring to help determine if Monument resources are being adequately protected as directed in the proclamation, and if the desired visitor experiences are being provided. Measurable indicators would be selected for monitoring key aspects of the visitor experiences and resources. Standards represent points at which visitor experiences and resource conditions become unacceptable. It is important to remember that standards do not represent goals or desired conditions, but trigger points when conditions become unacceptable.

Monitoring would not be complete unless the results were made available in a usable form and archived for future reference. Reports should generally be prepared each year, near the end of the calendar year, so they can be studied before the beginning of the next primary use season, and needed management actions can be initiated.

Monitoring will be directed at areas in which specific and important resource values and visitor experiences could be threatened. The Monument and Southwest Acquisition are experiencing increasing use that is affecting resources, infrastructure and management. Some of the more common impacts to resources as the result of the increasing use are trail deterioration, picnic area deterioration, wildlife impacts, soil compaction, erosion, and loss of vegetation. Some of the more common visitor experience impacts as the result of increasing use are crowding, visitor conflicts, closures, pets not under control, non-compliant behavior, trespass on non-federal lands, traffic conditions on the roads, and lack of available parking spaces.

RESOURCE MANAGEMENT PLAN-LEVEL DECISIONS (PROTESTABLE)

By the acceptance of this Proposed Plan, the following decisions are made for the allocation and use of federal lands, interests in lands, and resources in the Monument and Southwest Acquisition. Decisions are also made for the Planning Area lands identified for acquisition; these decisions will be applied only as acquisitions can be completed. Upon publication of the Notice of Availability of this document by the Environmental Protection Agency in the *Federal Register*, these decisions may be protested under provisions of Title 43 of the Code of Federal Regulations (CFR), Part 1610.5-2.

Issue 1—Land Tenure Adjustment

The total Planning Area includes approximately 15,635 acres.

The 5,402 acres designated by Presidential Proclamation 7394 as the "National Monument" also will continue to be designated as an Area of Critical Environmental Concern (ACEC). The Monument/ACEC will be managed for Proclamation and ACEC resource values. Management emphasis for the ACEC will continue to be on the interpretation of geologic and scenic values, and on intensive recreational uses, especially semi-primitive non-motorized recreation opportunity. These values also will be emphasized on lands acquired and managed in conjunction with the Monument.

If willing sellers exist, the 1,278 surface acres within monument boundaries but not presently in federal ownership will be acquired through exchange or purchase. The 837 acres of mineral ownership in the Monument will likewise be acquired.

Lands and interests acquired within the monument boundary will become part of the Monument and ACEC. These will be withdrawn from entry or disposal except by exchange, as provided in the Proclamation.

The 965-acre Southwest Acquisition recently purchased by the BLM is to be managed in conjunction with the Monument, and is recommended for inclusion as part of the Monument. (Note: Inclusion would require Congressional legislation.)

The 9,268-acre, privately owned North Edgeholding is also identified for acquisition by exchange or purchase, and for management in conjunction with the Monument. It is also recommended for inclusion in the Monument (which would require Congressional legislation). All mineral rights with this parcel are privately owned except gold, silver and quicksilver (mercury), which are federally owned. The private minerals will be acquired, if possible, to protect the Monument's resource values.

If acquisitions within monument boundaries are not completed, the BLM will acquire a 1.05-mile easement on the portion of BLM Road 1011 that crosses private surface. This would ensure federal control of access through the Monument.

If nonfederal lands cannot be acquired, the BLM will seek management control through agreements with landowners. These agreements will be focused on improving management efficiency and visitor services, and on protecting monument resource values and nonfederal property rights.

While recognizing valid existing rights, the BLM will consider the Planning Area to be a right-of-way exclusion area. Rights-of-way for uses that do not currently exist will not be considered except for those that would support monument purposes.

Issue 2—Access & Transportation

Access for recreational visits to the Monument and Planning Area will be provided on 5.9 miles of road designated as "open" for public access. An additional 7.8 miles of road will have "limited" access for authorized administrative and emergency uses only. Resource protection will be provided by "closing" 11.5 miles of existing roads to all uses [refer to Table 2-2, Table 2-3, and Map 7 (in the map section following this chapter) for designation of road segments]. As acquisitions are completed, roads and trails in the acquired areas will be evaluated and designated as "open" for public use, "limited" to authorized administrative or emergency use as a part of the transportation system, or "closed" and identified for rehabilitation.

Motorized access is provided to approximately 4,035 federal acres of the Planning Area. Non-motorized access is available to approximately 1,054 federal acres (refer to Map 14).

Designated trails provide an additional 7.23 miles of access to federal lands (refer to Table 2-4 and Map 7 for trail segment designations). Additional trails will be developed if land acquisitions are completed. Trails may also be developed on private land through management agreement.

Access for research permits will be considered as authorized administrative use and will be reviewed on an individual, case-by-case basis. Research may include field work, specimen collection or other types of scientific study. The permits may be issued after a thorough review of research goals, strategies, operational detail and potential for resource disturbance. The duration of each permit may vary based on applicant performance (past and present), the resources being studied, the type and extent of resources and other related factors.

The off-highway vehicle (OHV) designation for the entire Planning Area will be "limited to designated roads and trails" for motorized and mechanical modes of travel. This means that visitors using motorized and mechanical travel must remain on designated roads and trails, except for authorized use, emergency services, or valid existing rights.

On acquired edgeholdings, the BLM will allow a 2-year period of resource survey and evaluation before making land and resource allocations.

Issue 3—Recreational Activities

The BLM will designate federal lands within the Planning Area (including any acquired lands) as a Special Recreation Management Area (SMRA). Acquired lands would be operated under the rules at Title 43 CFR, Subpart 8365 as they support the purposes of the proclamation.

The Monument and Southwest Acquisition would be identified for "day use" only. Other parts of the Planning Area would be "day use" only, unless a detailed evaluation (including a site-specific environmental analysis) of the resources in a portion of the acquired lands showed capabilities of supporting camping and/or equestrian use without undue resource degradation.

Special geologic features will be protected on 167 acres of federally owned monument lands for visitor viewing and observation. Identified acquisitions, if completed, could increase this area to as much as 2,284 acres. These features represent the remarkable outdoor laboratory identified in the proclamation.

Visual Resource Management (VRM) Class II designation will be maintained on federal lands, except on the 1,202-acre VRM Class III area provided to allow for facility improvement (refer to Map 15). Acquired lands would be inventoried and placed in one of these two classes based on the extent of cultural modification to the landscape; the need to implement future management actions, install facilities, and accommodate customer services; or the need for resource protection and rehabilitation.

Weed monitoring and treatment will be emphasized in the 241-acre intensive use area to reduce the impact of weed introduction by recreation users.

Issue 4—Ecosystem Restoration

Road and trail closures on 11.5 and 1.5 miles respectively will provide for some ecological restoration (refer to Table 2-2, Table 2-3, Table 2-4 and Map 7 for information on the roads and trails to be closed).

The following two actions are expected to improve vegetative and land health, watershed condition, and wildlife habitat condition in the short term on the specified lands: (1) discontinuing livestock grazing on 4,088 acres of federal lands within the Monument, and (2) the determination not to issue a renewable permit on 965 acres of acquired lands. If, in time, the BLM determined that short-duration, non-renewable grazing would help to achieve specific vegetative or ecological objectives, permits for such use could be issued (refer to Map 10).

Riparian monitoring on a few acres of federal land will be established to determine the potential for riparian habitat development. If potential is shown, development efforts will be increased. Some land acquisition could increase this potential. Riparian habitat will be expanded to the extent that potential is indicated (refer to Map 12).

Woodlands and vegetative treatments will be applied on acreages and areas identified on Map 13 to move the Fire Regime Condition Class from Classes 2 and 3 toward Class 1. Treatments will be prioritized based on percent slope, Fire Regime Condition Class, access and ownership. The New Mexico Fire and Fuels Management Program has placed the Monument area in Fire Management Unit B4, which is defined as "areas where unplanned wildland fire is not desired because of current conditions."

The Public Land Health Standards established in the Secretary of the Interior's Decision of January 12, 2001, for New Mexico public lands is carried forward into this RMP. The standards include: (1) the uplands site standard; (2) the biotic communities standard (including native, threatened, and endangered, and special-status species); and (3) the riparian sites standard.

Issue 5—American Indian Uses & Traditional Cultural Practices

Specific areas where American Indian uses and traditional cultural practices take place are not identified because of the sacred nature of some of these uses. Also, visitors' natural inquisitiveness could lead to higher levels of intrusion.

Road and trail miles will be minimized in traditional use areas by road and trail closures and relocations.

The Pueblo de Cochiti will continue to have close day-to-day participation in managing the Monument, and can close roads temporarily for infrequent control of access to avoid disruption of tribal ceremonies.

The Pueblo de Cochiti will continue to be involved through Cooperative Management Agreements.

IMPLEMENTATION OR ACTIVITY-LEVEL DECISIONS (list not inclusive)

These decisions are not protestable but may be appealed when the BLM determines that they will be implemented.

- Facilities improvement and development will include hard-surfacing of the 5.9 mile road (BLM 1011), when funds are available.
- The BLM will make available a safe and reliable water supply in or near the Monument for visitor comfort and convenience. Groundwater resources will be considered as a source of this water supply.

- The BLM will maintain safe hiking trails at the picnic area, including some trails that meet Americans with Disability Act standards. The agency will also maintain and improve trails at the Scenic Overlook, and develop additional trails if land acquisitions are completed.
- The BLM will improve signing and facility locations to protect special geologic resources.
- The BLM will maintain and expand surface water developments for wildlife use.
- The BLM will establish and maintain storm water drainage patterns to drain water away from parking and intensive visitor use areas.
- The BLM will treat vegetation and woodlands meeting the criteria for treatable acreage by the method or combination of methods determined by the agency to have the greatest potential to achieve the "desired future condition" for the area.
- The BLM will implement the following actions to maintain and enhance healthy habitats for wildlife populations within the boundaries of the Planning Area.
    - ♦ Conduct a complete biotic survey of the area.
    - ♦ Conduct breeding bird surveys on a regular and repeating schedule.
    - ♦ Survey the stream bottom of Peralta Canyon every 3 years for evidence of riparian and wetland development. This survey schedule will also be applied to any springs or seeps discovered.
    - ♦ Fence big-game winter habitat to prevent damage from trespass livestock.
    - ♦ Coordinate wildlife management activities with the New Mexico Department of Game & Fish.

ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

Leaving the Area as a Pristine and Peaceful Environment

This alternative would require the removal of existing facilities and the restriction of visitor use in an attempt to return this area to a pristine appearance and provide a peaceful environment. This alternative would not be feasible or prudent. The federal government already has made a substantial investment in providing facilities and services to accommodate public use, visitor health and safety, and resource protection. Therefore, this alternative was dismissed from further consideration.

Maximizing Recreational Use of the Monument

Emphasizing recreation over protection of the biological, scientific and historical objects of interest within the Monument boundaries would not be a reasonable alternative. Such use would lead to increased user days and more user conflicts throughout the Monument, which would lead to additional impacts on the resources for which the Monument was designated. This area is a complex landscape with spectacular geologic scenery that has been a focal point for visitors for many years. These resources would not be protected as required by the proclamation if recreational use of the Monument was maximized. Therefore, this alternative also was dismissed from further consideration.

SUMMARY OF IMPACTS

Table 2-9 provides a summary of the impacts to the Planning Area's uses and resources that would occur from implementation of the three alternatives analyzed in this RMP/EIS. More detailed impact analysis can be found in Chapter 4.

TABLE 2-9

COMPARISION OF ALTERNATIVES AND SUMMARY OF IMPACTS BY ISSUE

ISSUE/Element or Factor	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Issue 1—Land Tenure Adjustment			
Easement Acquisition	1.05 miles for access through the Monument (BLM Road 1011)	Same as Alternative A, except acquisition of inholdings would eliminate the need for this easement.	Same as Alternative B
Cooperative Management Agreements (CMAs)	Monument management on 1,278 acres of inholdings would be more effective with CMAs in place.	Replaced by acquisition from willing sellers.	Same as Alternative B
Land Acquisition			
Inholdings—surface acres 1,278; nonfederal mineral acres 837	Not applicable	Acquire for resource protection and effective monument management to: Reduce recreation visitor trespass Reduce potential for visual intrusions	Same as Alternative B
Edgeholdings—surface acres & nonfederal minerals acres 9,268	Not applicable		
Issue 2—Access & Transportation			
Visitor use (visitors/year)	150,000	50,000	50,000
Intensive recreation use (acres)	241	241	280
Roaded Natural Areas (acres)	1,987	1,987	2,895
Semi-Primitive Motorized (acres)	2,070	2,048	1,415
Semi-Primitive Non-Motorized (acres)	1,032	1,054	779
Roads "Open" (miles)	24.20	5.95	9.50
Roads with "Limited" use (miles)	1.05	7.80	5.75
Roads "Closed" (miles)	0.00	11.50	10.40
Trails "Open" (miles)	8.03	7.23	8.93
Trails "Closed" (miles)	0.40	1.90	0.40
ORV/OHV Area Designations (acres)			
Open	0	0	0
Closed	0	0	0
Limited*	4,124 *(Limited to existing roads & trails)	4,124 *(Limited to designated roads & trails)	4,124 *(Limited to designated roads & trails)
Access to Highly Valued Traditional Use Area	Intrusion of 5.9 miles of improved road would cause loss of privacy.	Intrusion of unimproved road access would be reduced by an estimated 3 to 5 miles.	Intrusion of new access would create loss of privacy in highly valued traditional use area.
Trail Access	8.03 miles—would create the potential for damage & erosion to 167 acres of special geologic features.	7.23 miles—would create the potential for damage & erosion to 679 acres of special geologic features.	8.93 miles—would create the potential for damage & erosion to 679 acres of special geologic features.
Road Easement	1.05 miles—would be acquired for legal access through the Monument & Planning Area.	Same as Alternative A, except acquisition of inholdings would eliminate the need for this easement.	Same as Alternative B, except the east access road would require 1.4 miles of road easement outside the Monument but within the Planning Area.
Public Access (total road miles)	24.20	5.95	9.50
Limited Access (total road miles)	1.05	7.80	5.75
Motorized Access (acres)	4,057	4,035	4,310
Dispersed Use Access (acres)	1,032	1,054	779
Public Trails Access (miles)	8.03	7.23	8.93

TABLE 2-9

COMPARISION OF ALTERNATIVES AND SUMMARY OF IMPACTS BY ISSUE

ISSUE/Element or Factor	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Issue 2—Access & Transportation (concl'd)			
Watershed Stability & Water Quality (direct & indirect impacts)	25.25 miles of road	5.95 miles of road. Watershed stability & water quality would improve.	9.5 miles of road. Watershed stability & water quality would improve.
Wildlife Habitat Fragmentation (per square mile of federal land)	An average of approximately 3.04 miles of road & 1.01 miles of trails.	An average of approximately .75 miles of road & .91 miles of trails.	An average of approximately 1.14 miles of road & 1.12 miles of trails.
Issue 3—Recreational Activities			
Facility Improvement & Maintenance	5.9 miles of BLM Road 1011 through the Monument, w/241 acres of intensive use areas. The BLM would develop a means to make available a safe & dependable public water supply.	Same as Alternative A	Same as Alternative A, except the intensive use areas would be enlarged to 280 acres (total).
Recreational Visits	Privacy would decrease & intrusion on traditional use & resource degradation would increase as visitation moved toward 150,000 visitors/year.	Management would influence visitation to stabilize visitors at approximately 50,000/year to minimize intrusion & resource degradation.	Same as Alternative B
Cultural Resources (indirect impacts)	Illegal collection, cumulative & irreversible impacts may result in loss of sites.	Impacts described under Alternative A would be mitigated through use of inventory, documentation, & buffer areas, w/excavation limited	Same as Alternative B
Prescribed Fire (as a management tool)	Would have reduced effectiveness in the 241-acre intensive use area.	Would have reduced effectiveness in the 241-acre intensive use area.	Would have reduced effectiveness in the 280-acre intensive use area.
Unique Geologic Features	150,000 visitors/year would result in a high probability of damaging or destroying some special geologic features on 167 federal acres in the Monument.	50,000 visitors/year would reduce the probability of damage &/or destruction of special geologic features on lands within & adjoining the Monument. Long-term protection of geologic features would be provided by proper location of recreational signing & facilities.	Same as Alternative B Same as Alternative B
Visual Resources Management (VRM)			
VRM Class I acres	0	0	0
Class II acres	4,124	3,887*	3,138*
Class III acres	0	1,202*/**	1,951*/**
Class IV acres	0	0	0
		*Monument & Southwest Acquisition **w/less restrictive facility development compliance	*Monument & Southwest Acquisition **w/less restrictive facility development compliance
Water	Trampling of vegetation & development of social trails on 241 acres of intensive use areas would result in increased erosion & delivery of sedimentation to stream channels.	Trampling of vegetation & development of social trails on 241 acres of intensive use areas would result in increased erosion & delivery of sedimentation to stream channels.	Trampling of vegetation & development of social trails on 280 acres of intensive use areas would result in increased erosion & delivery of sedimentation to stream channels.

TABLE 2-9

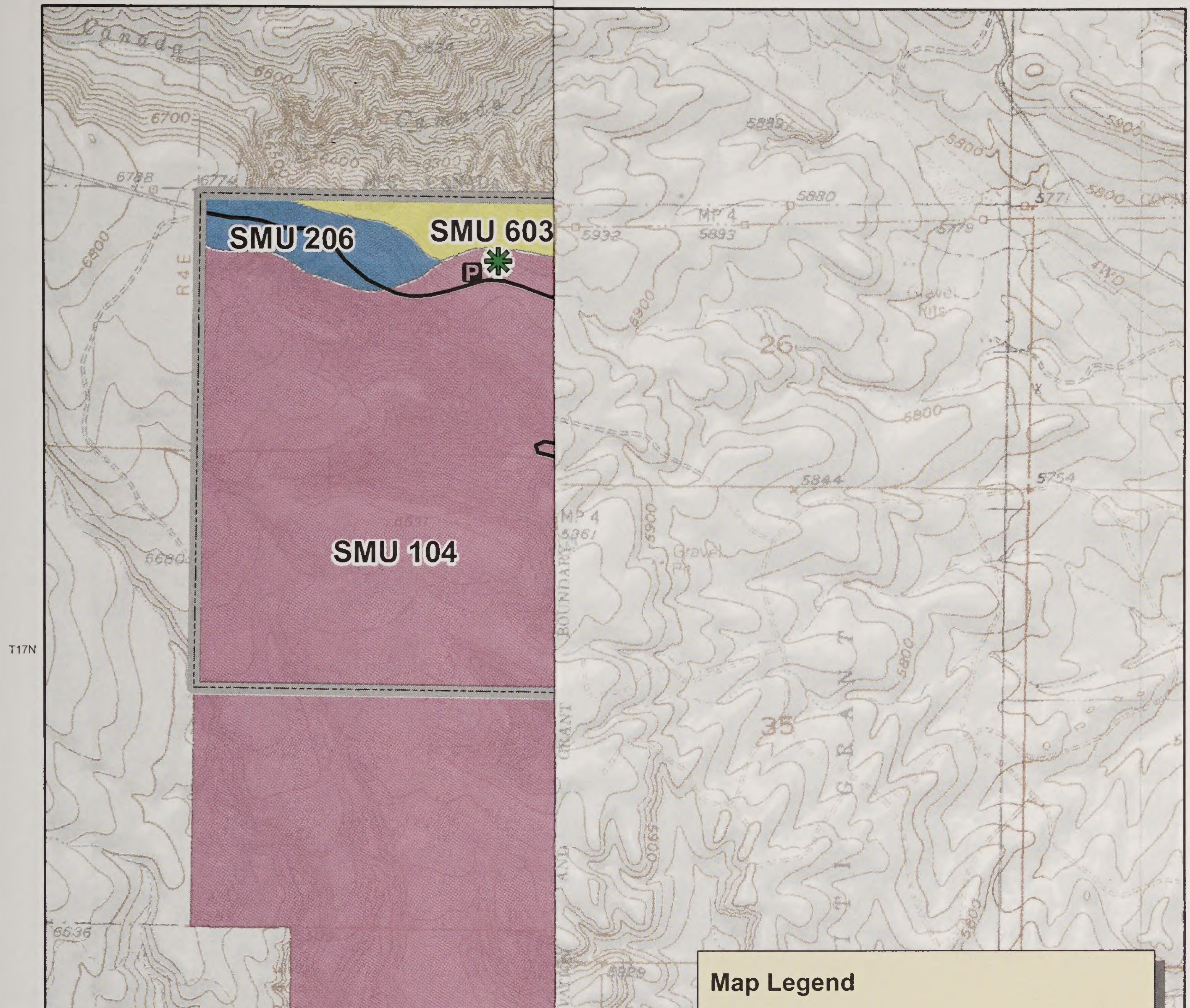
COMPARISION OF ALTERNATIVES AND SUMMARY OF IMPACTS BY ISSUE

ISSUE/Element or Factor	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Issue 3—Recreational Activities (concl'd)			
Water (concl'd)	Drinking water that met supply & quality needs, health & safety requirements would be made available in/near the Monument.	Same as Alternative A	Same as Alternative A
Wildlife Habitat			
Visitor Numbers	Visitation could reach 150,000/year. Most direct impacts to wildlife would come from interaction with the visiting public.	Management would encourage visitation at about 50,000/year. Most direct impacts to wildlife would come from interaction with the visiting public.	Same as Alternative B
Fragmentation (per square mile of federal habitat)	Approximately 3.04 miles of road & 1.01 miles of trails	Approximately .75 miles of road & .91 miles of trails	Approximately 1.14 miles of road & 1.12 miles of trails
Vegetation & Woodland Management	The potential exists for indirect & long-term effects from noxious weed introduction.	Same as Alternative A	Same as Alternative A
	The 241 acres used for intensive recreation by as many as 150,000 visitors/year would have little opportunity to develop diverse, healthy vegetation.	The 241 acres used for intensive recreation by as many as 50,000 visitors/year would have little opportunity to develop diverse, healthy vegetation.	The 280 acres used for intensive recreation by as many as 50,000 visitors/year would have little opportunity to develop diverse, healthy vegetation.
Issue 4—Ecosystem Restoration			
Access & Transportation	Close 0.0 miles of road	Close 11.5 miles of road, rehabilitate by natural &/or mechanical means.	Close 10.4 miles of road, rehabilitate by natural &/or mechanical means.
	Close 0.4 miles of trail, rehabilitate by natural &/or mechanical means.	Close 1.9 miles of trail, rehabilitate by natural &/or mechanical means.	Same as Alternative A
Rangeland/Livestock Grazing	Discontinue grazing on 4,088 federal acres. This would help to return to a natural fire regime, reduce potential for catastrophic fire, improve watershed conditions, & improve ecologic diversity.	Same as Alternative A, except short-duration grazing could be permitted to advance the purposes of the proclamation.	Same as Alternative B
Vegetation & Woodland Treatment	934 acres of treatment would result in long-term vegetative health & diversity & improved watershed condition.	Same as Alternative A, except identified &/or recommended acquisition could increase the acres of treatment to as much as 2,236 acres.	Same as Alternative B
Riparian Areas	Exclosures & monitoring would lead to expansion of riparian habitat areas where possibility was demonstrated. Need for exclosures & monitoring would be reevaluated at the end of 5 years unless positive results were occurring.	Same as Alternative A, except identified & recommended acquisition could lead to expansion of the exclosures, monitoring & riparian habitat area.	Same as Alternative B

TABLE 2-9

COMPARISION OF ALTERNATIVES AND SUMMARY OF IMPACTS BY ISSUE

ISSUE/Element or Factor	ALTERNATIVE A	ALTERNATIVE B	ALTERNATIVE C
Issue 5—American Indian Uses & Traditional Cultural Practices			
Access & Transportation	Intrusion of many miles of road would result in loss of privacy in highly valued traditional use area.	Miles of road in traditional use area reduced by 3 to 5 miles.	Same as Alternative A
		Infrequent short-term closures could be requested on open roads & trails.	Same as Alternative B
		Affected tribes & pueblos would be consulted on access & transportation activities.	Same as Alternative B
	Intrusion of 5.9 miles of improved road would cause loss of privacy in highly valued traditional use area.	Same as Alternative A	Same as Alternative A
Traditional Use Concerns	Close day-to-day consultation with Pueblo de Cochiti.	Same as Alternative A	Same as Alternative A
	Consultation with other tribes as required for NEPA, NHPA, & NAGPRA.	Same as Alternative A	Same as Alternative A
Cultural Resources	Consultation with tribes as required for cultural resource compliance.	Same as Alternative A	Same as Alternative A
Environmental Justice	Pueblo de Cochiti involved in management through Cooperative Management Agreement; consultation with other tribes & pueblos.	Same as Alternative A	Same as Alternative A


SMU 206
SMU 603
SMU 104
R4E
T17N
T16N
R04E
26
35
Map Legend
Overlook
Parking Lot
Primary Access Road
KKTR Monument Boundary
Cochiti-Espiritu Association (353)
Cochiti-Montecito Association (104)
Espiritu-Bamac Association (345)
Flugle-Waumac Complex (307)
Laventana-Mirand Very Cobbly Loam (603)
Pinitos Loam (206)
Totavi Loamy Sand (52)
Waumac-Bamac Association (300)

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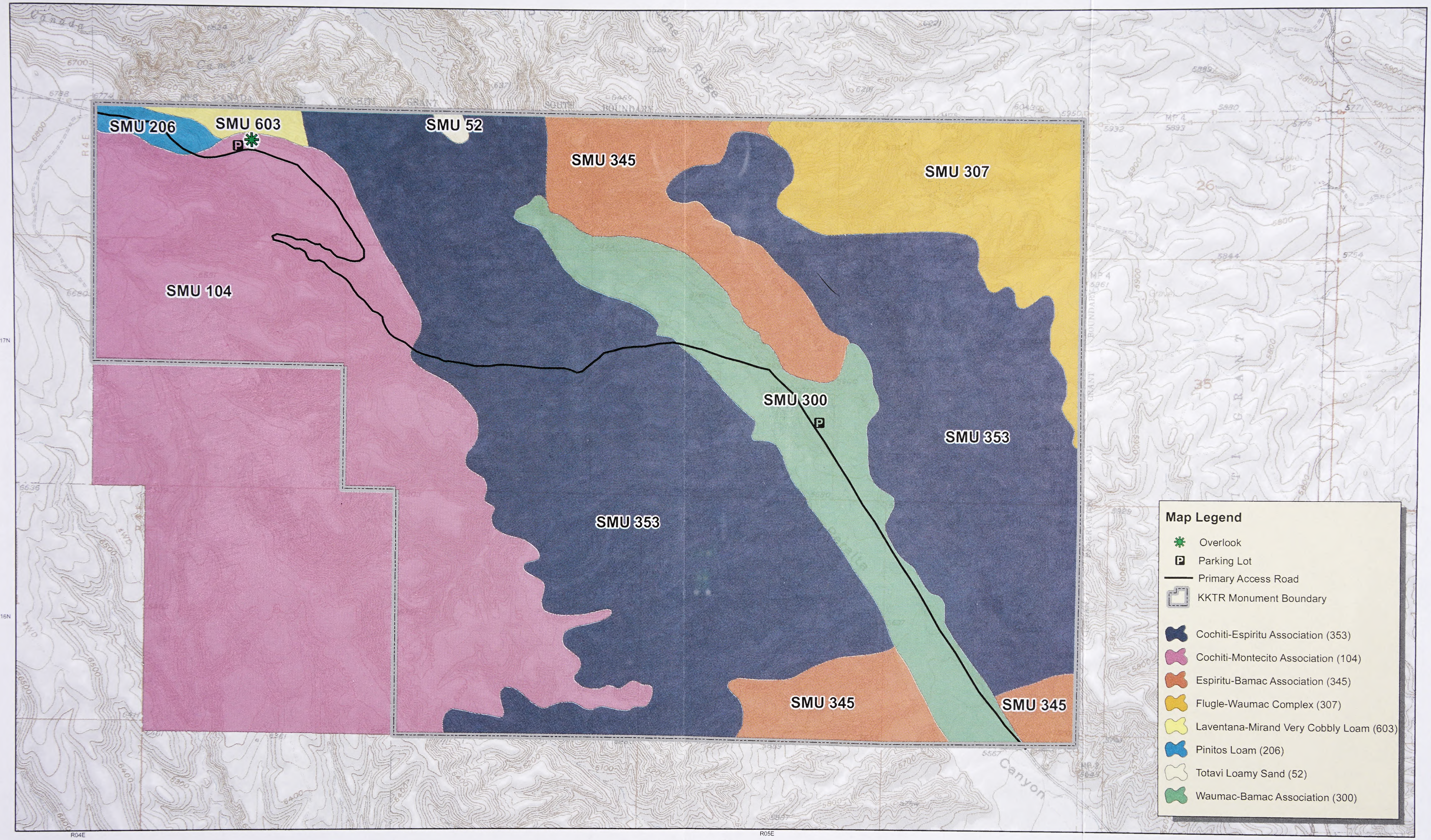
Map 4
Soil Map Units (SMUs)



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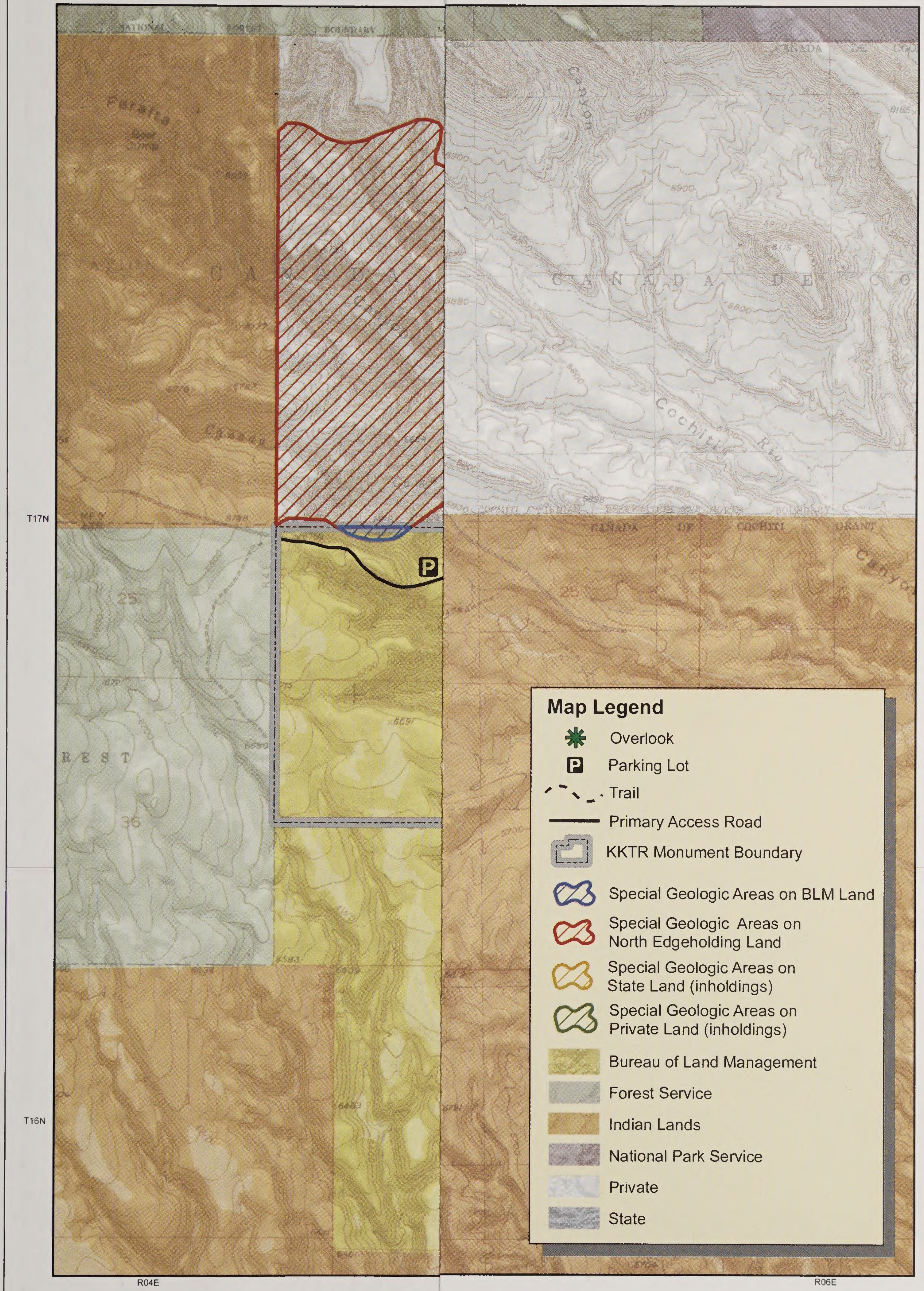
Projection: UTM Zone 13
Datum: NAD 1983

Map 4
Soil Map Units (SMUs)



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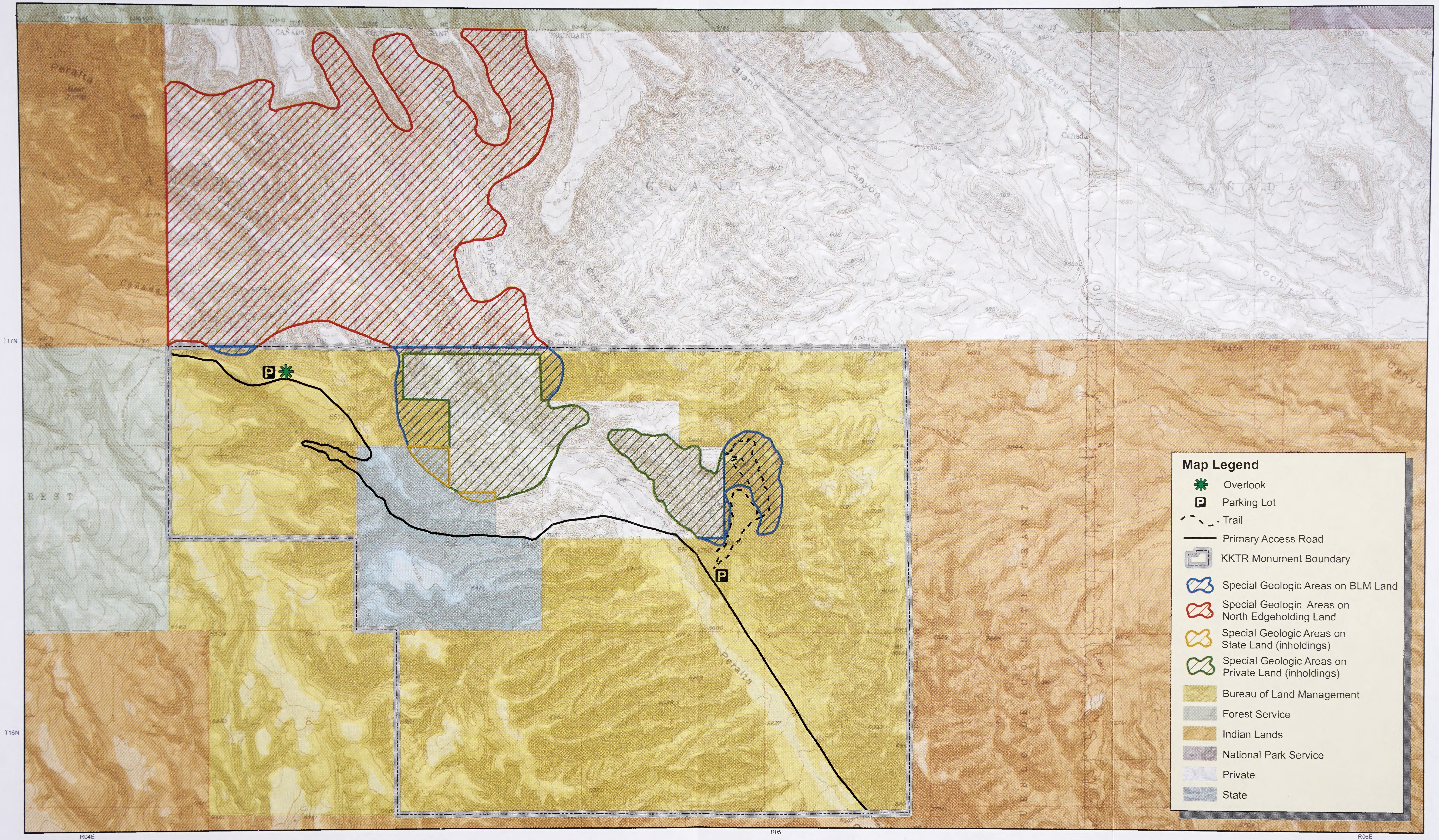
may be updated without notification.

Map 5
Areas with Special Geologic Features



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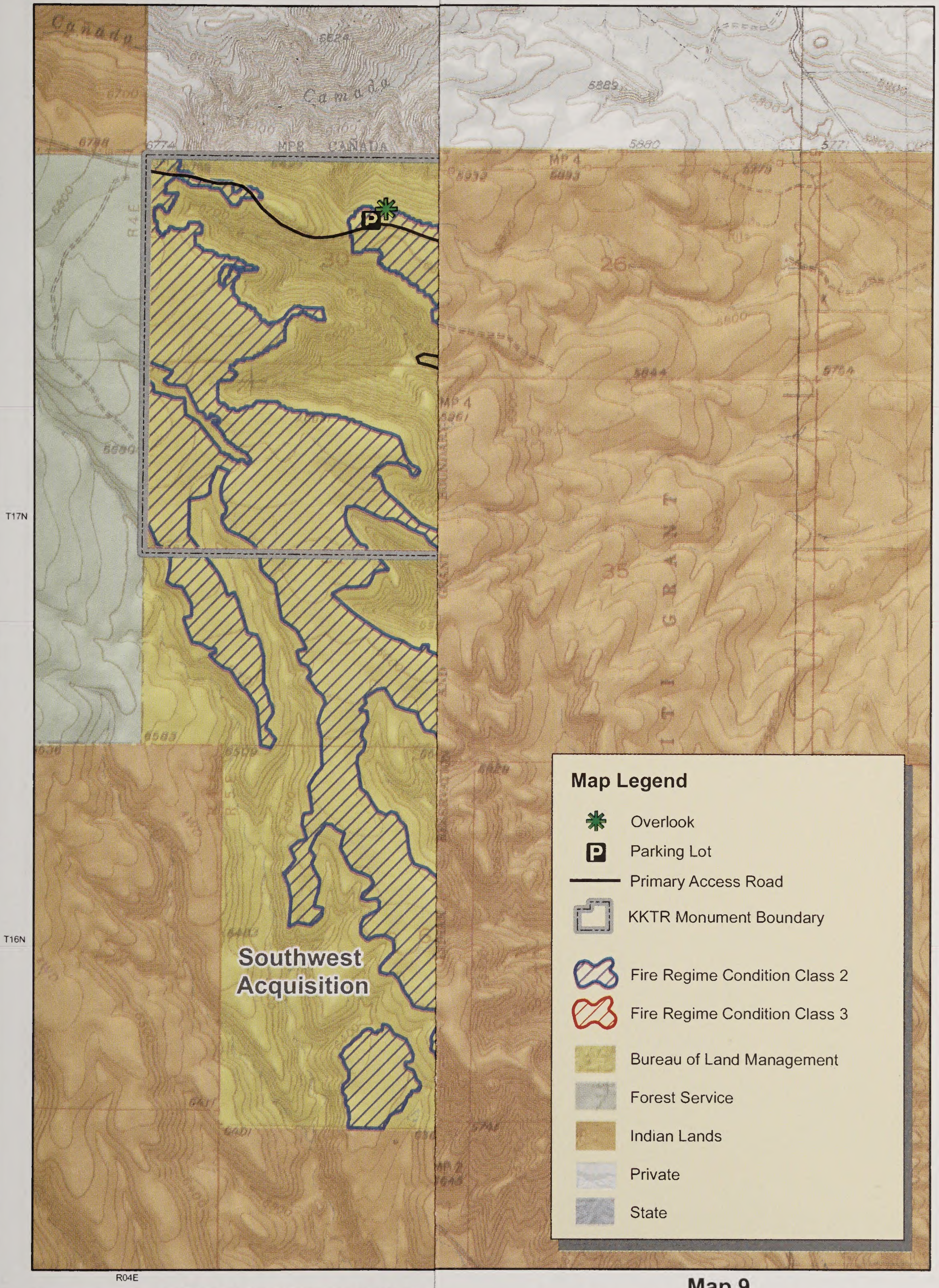
Projection: UTM Zone 13
Datum: NAD 1983

Map 5
Areas with Special Geologic Features



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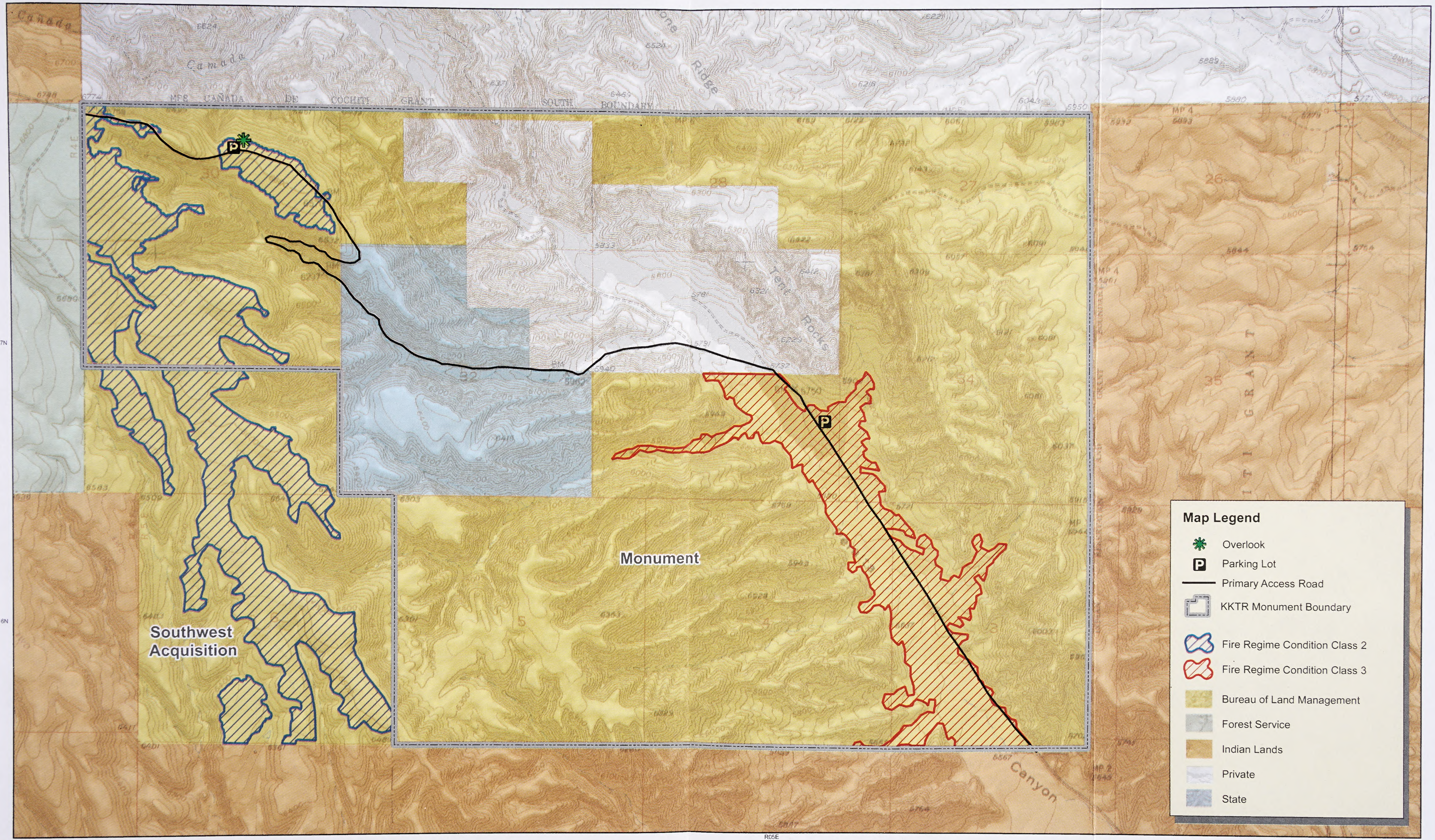
Map 9
Potential Hazardous Fuel (Vegetative) Treatment Areas Under Alternative A (Monument and Southwest Acquisition)



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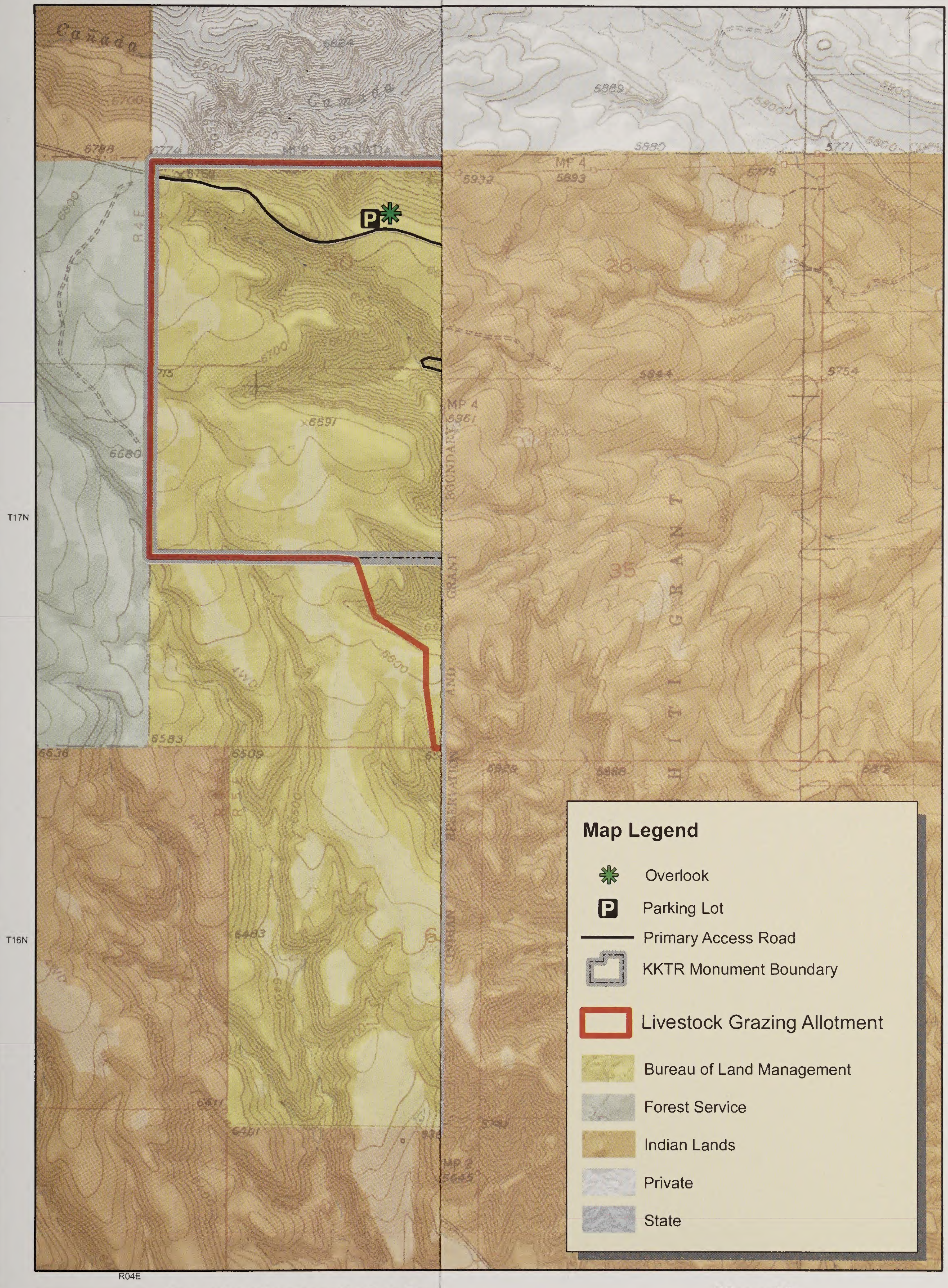
Projection: UTM Zone 13
Datum: NAD 1983

Map 9
Potential Hazardous Fuel (Vegetative) Treatment Areas Under Alternative A (Monument and Southwest Acquisition)



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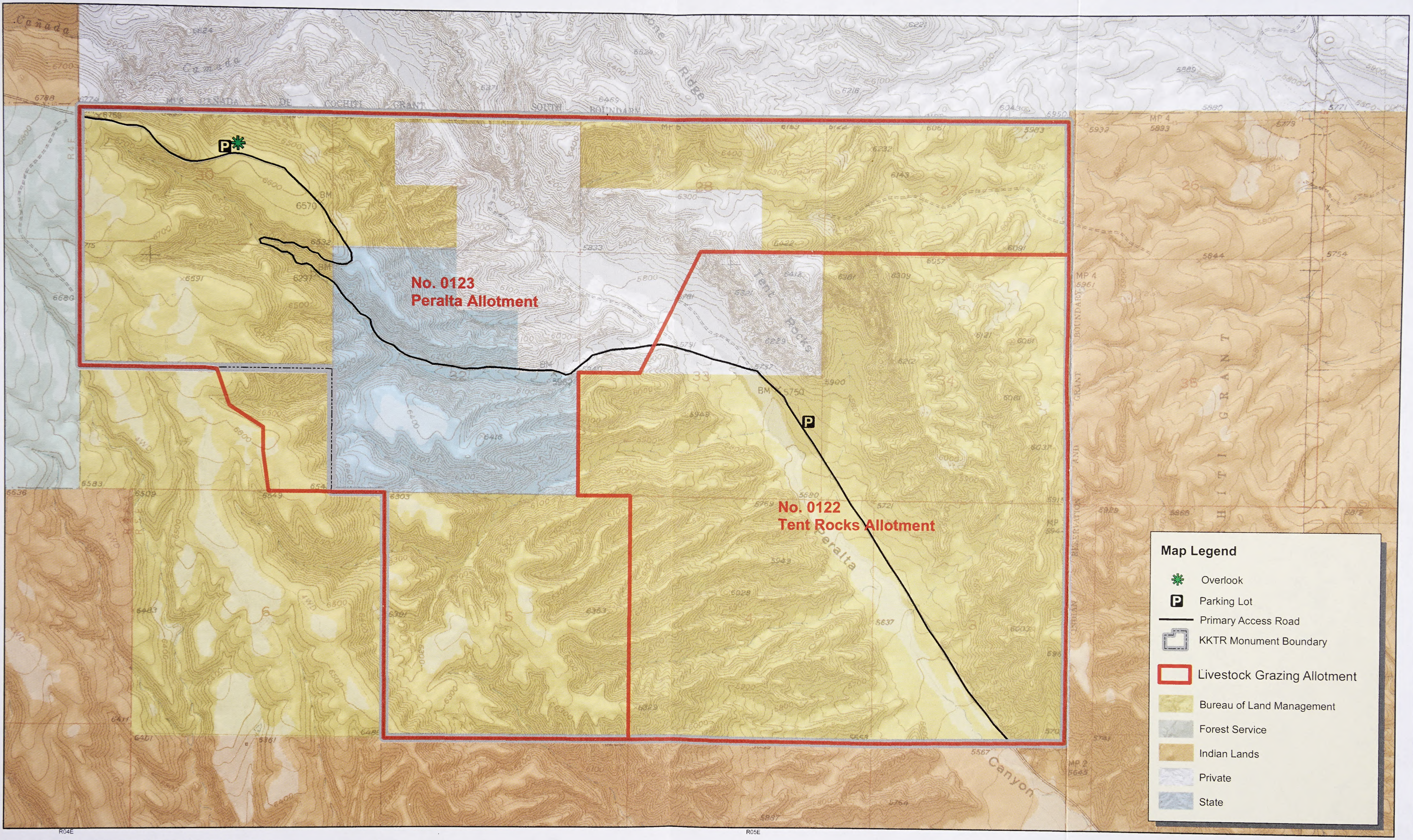
Map 10
Livestock Grazing Allotments in the Monument and Southwest Acquisition



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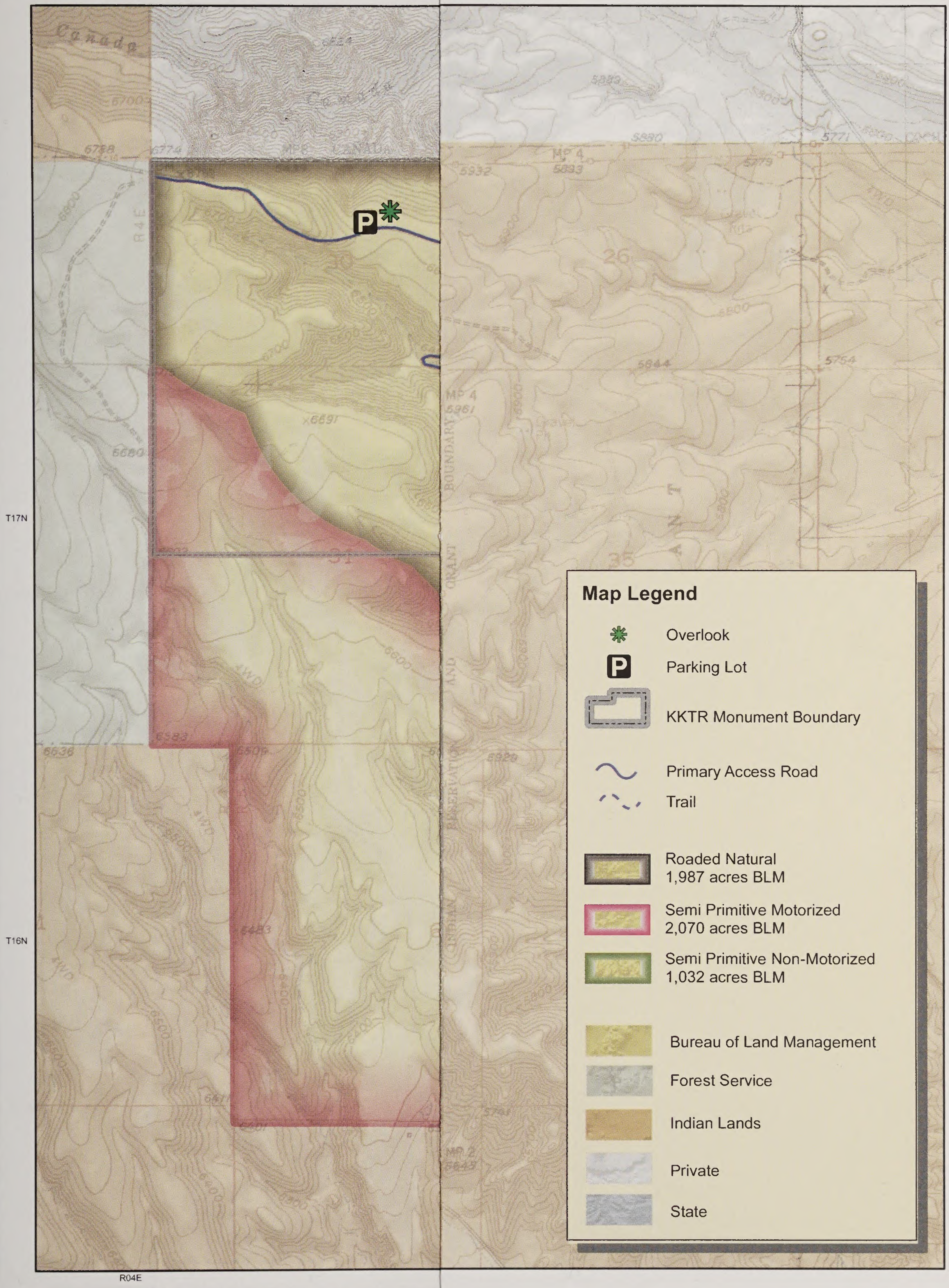
Projection: UTM Zone 13
Datum: NAD 1983

Map 10
Livestock Grazing Allotments in the Monument and Southwest Acquisition



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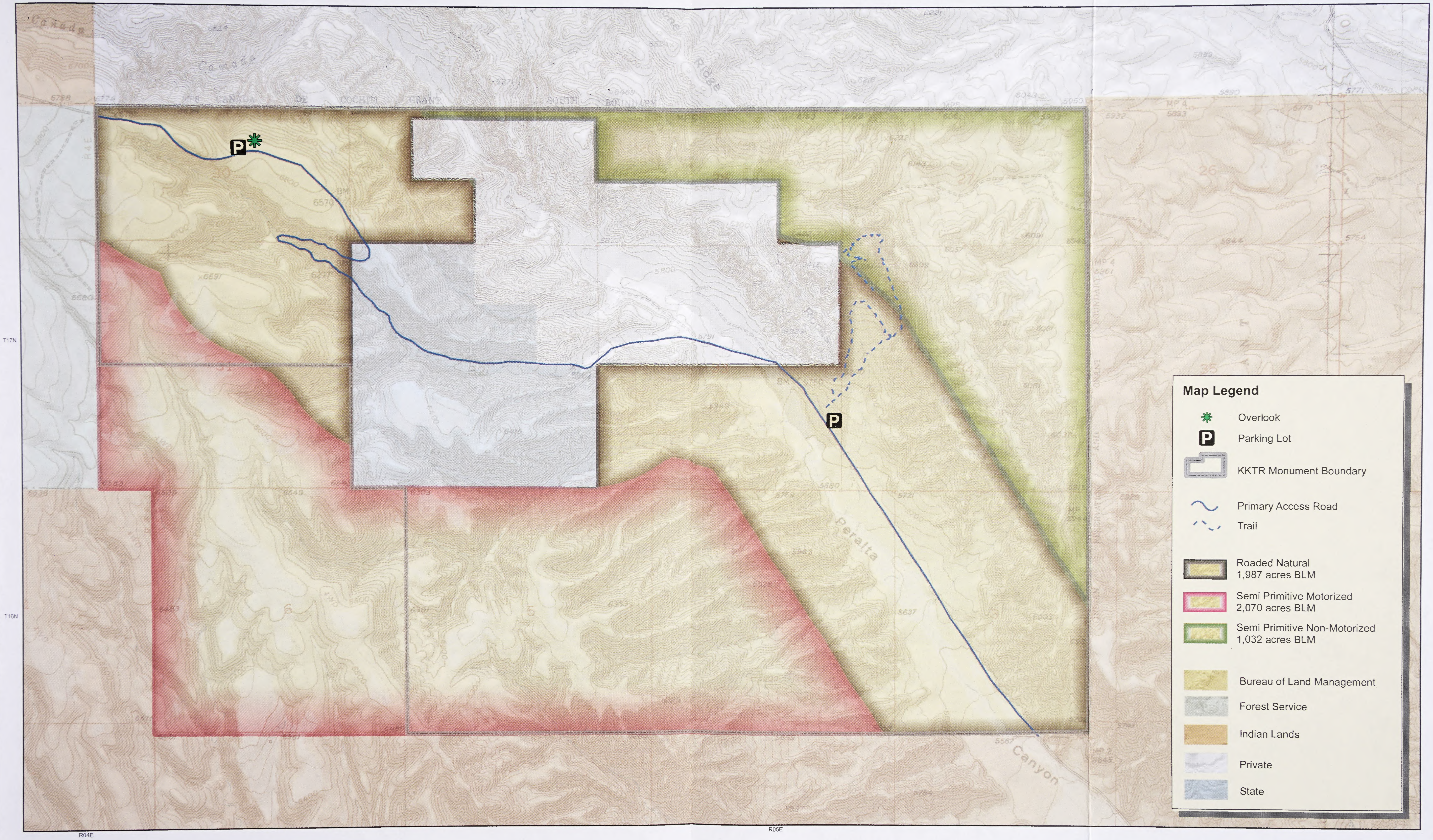
Map 11
ROS (Recreation Opportunity Spectrum) Classifications, Alternative A



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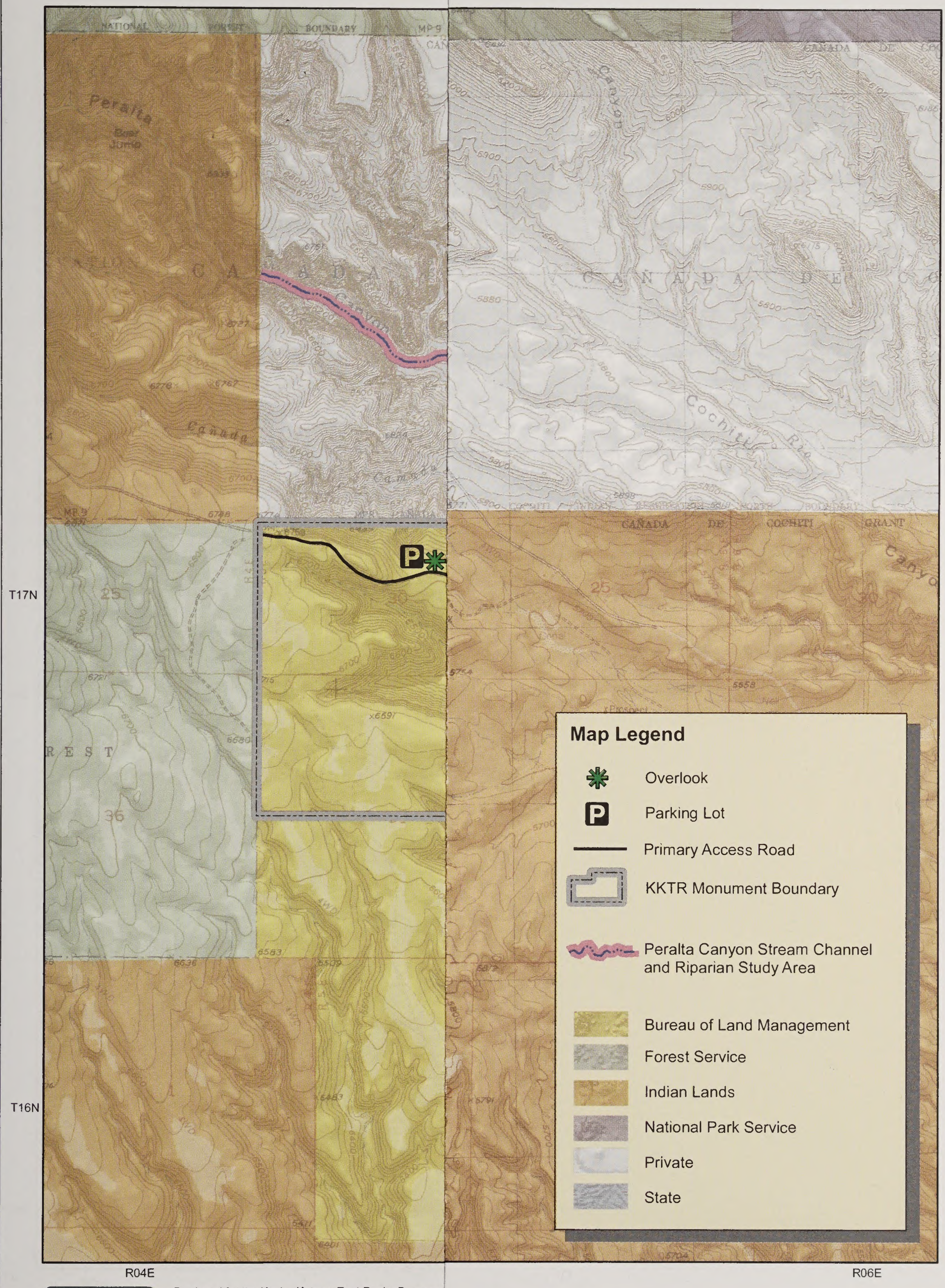
Projection: UTM Zone 13
Datum: NAD 1983

Map 11
ROS (Recreation Opportunity Spectrum) Classifications, Alternative A



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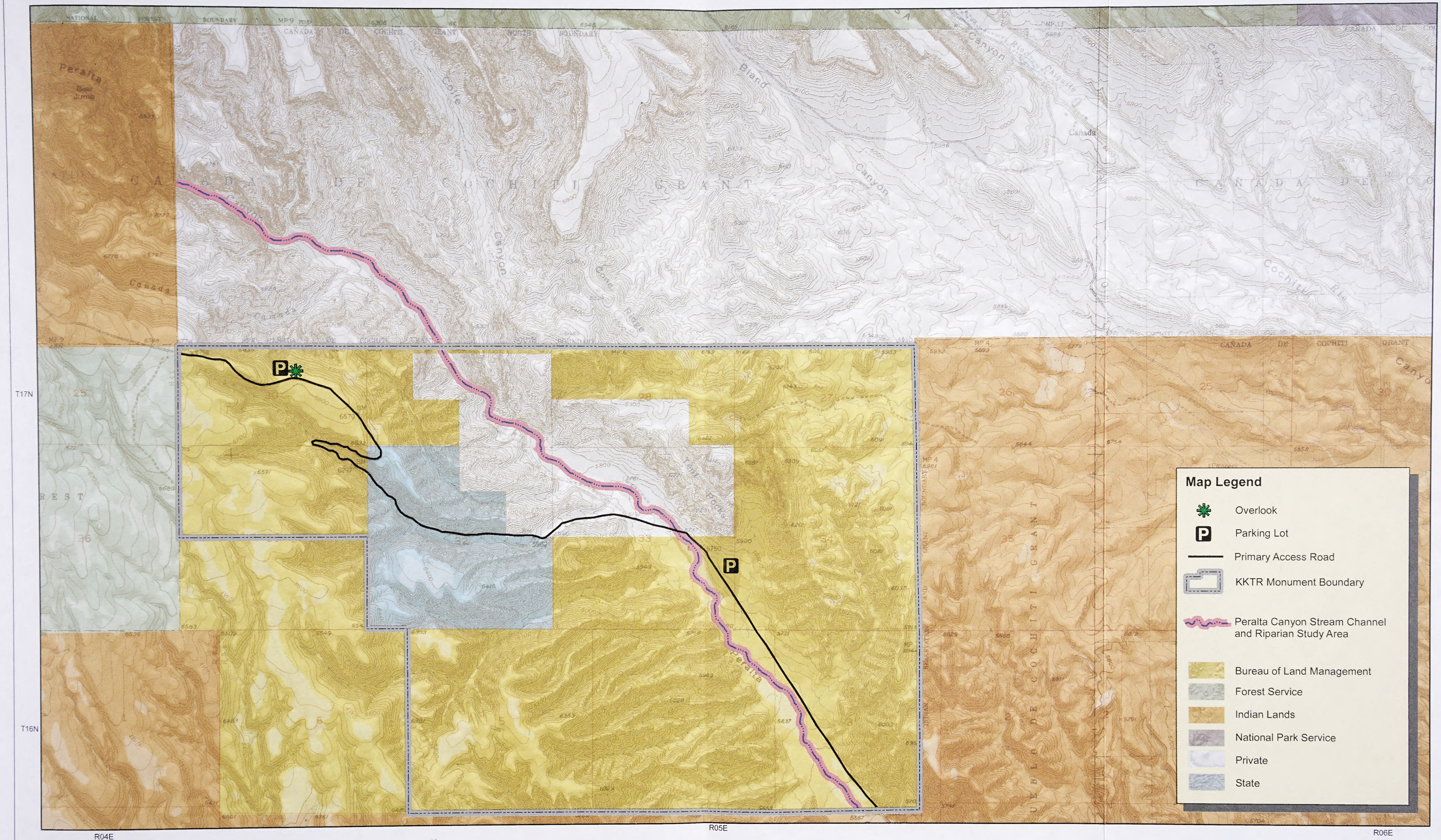
Map 12
Peralta Canyon Riparian Study Area



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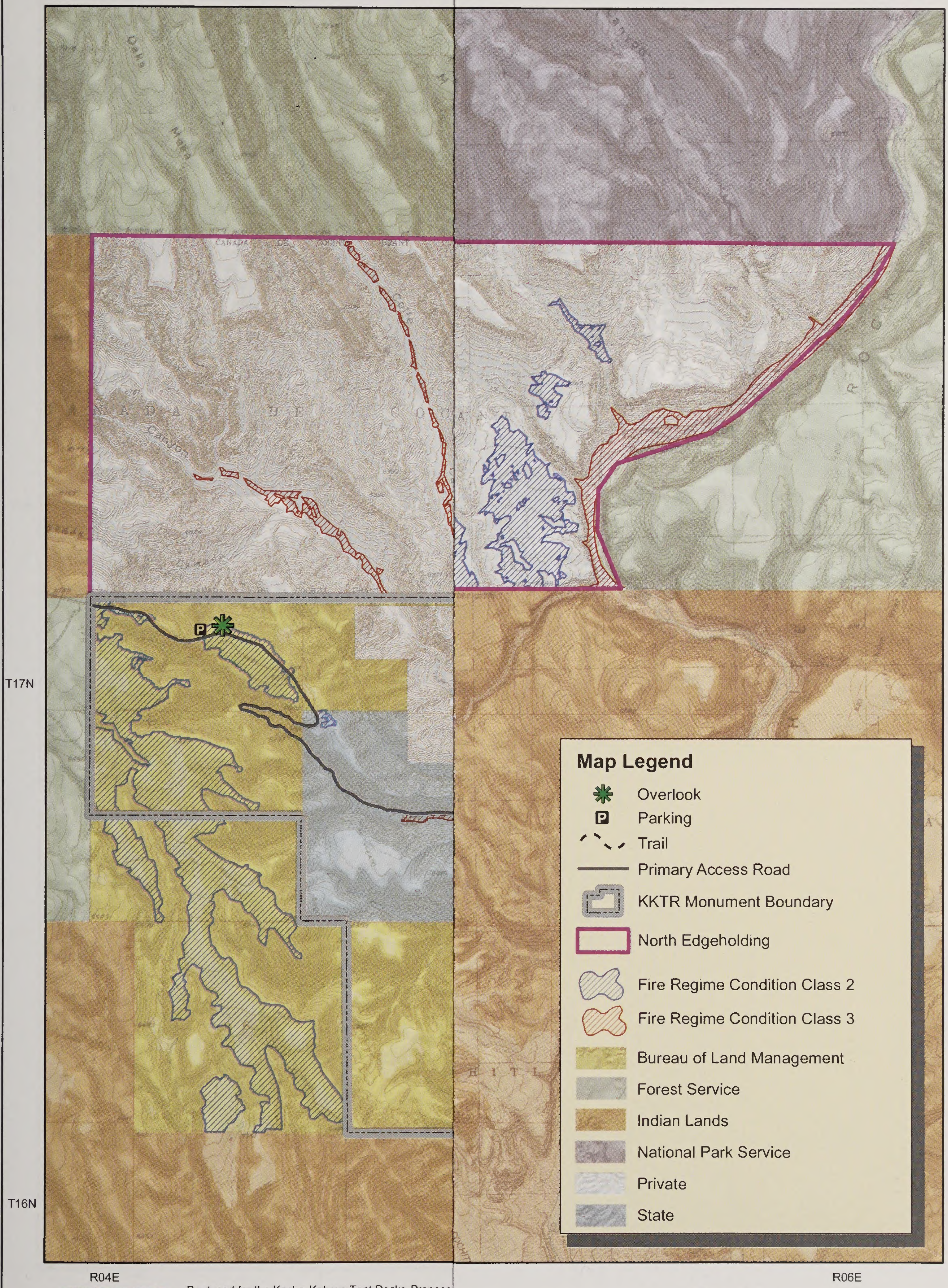
Projection: UTM Zone 13
Datum: NAD 1983

Map 12
Peralta Canyon Riparian Study Area



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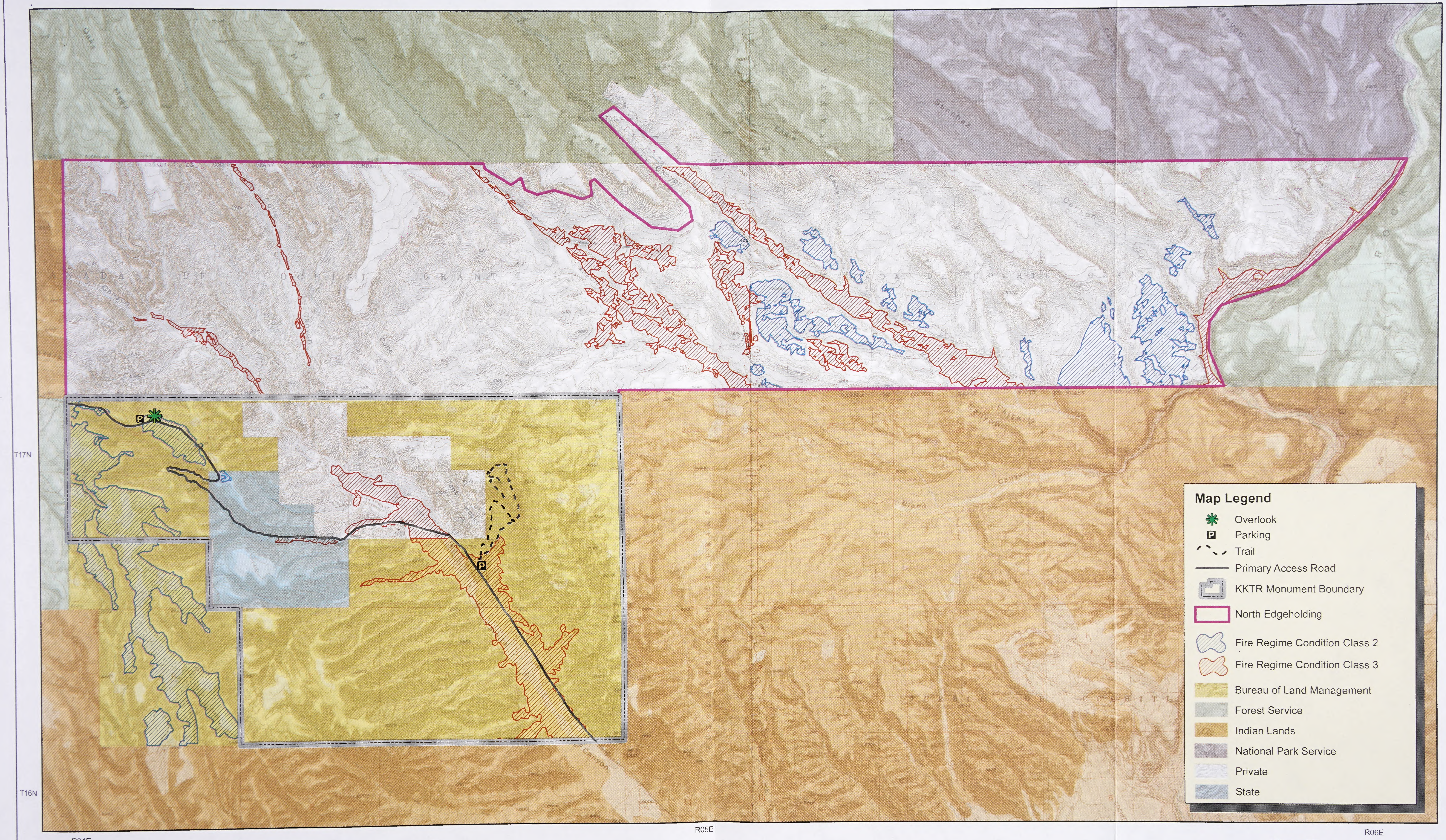
Map 13
Potential Hazardous Fuel (Vegetative) Treatment Areas Under Alternatives B and C (Planning Area)



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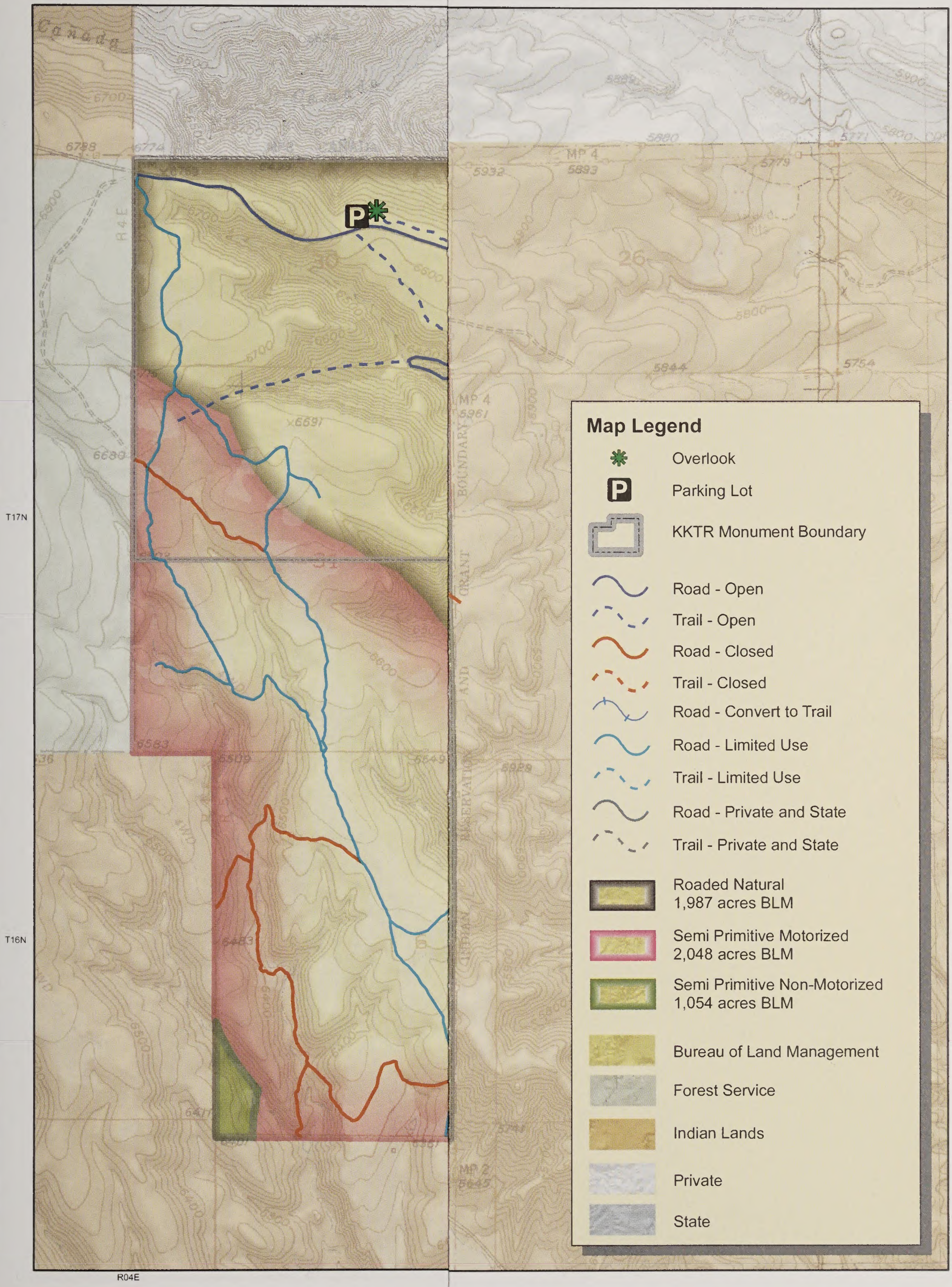
Projection: UTM Zone 13
Datum: NAD 1983

Map 13
Potential Hazardous Fuel (Vegetative) Treatment Areas Under Alternatives B and C (Planning Area)



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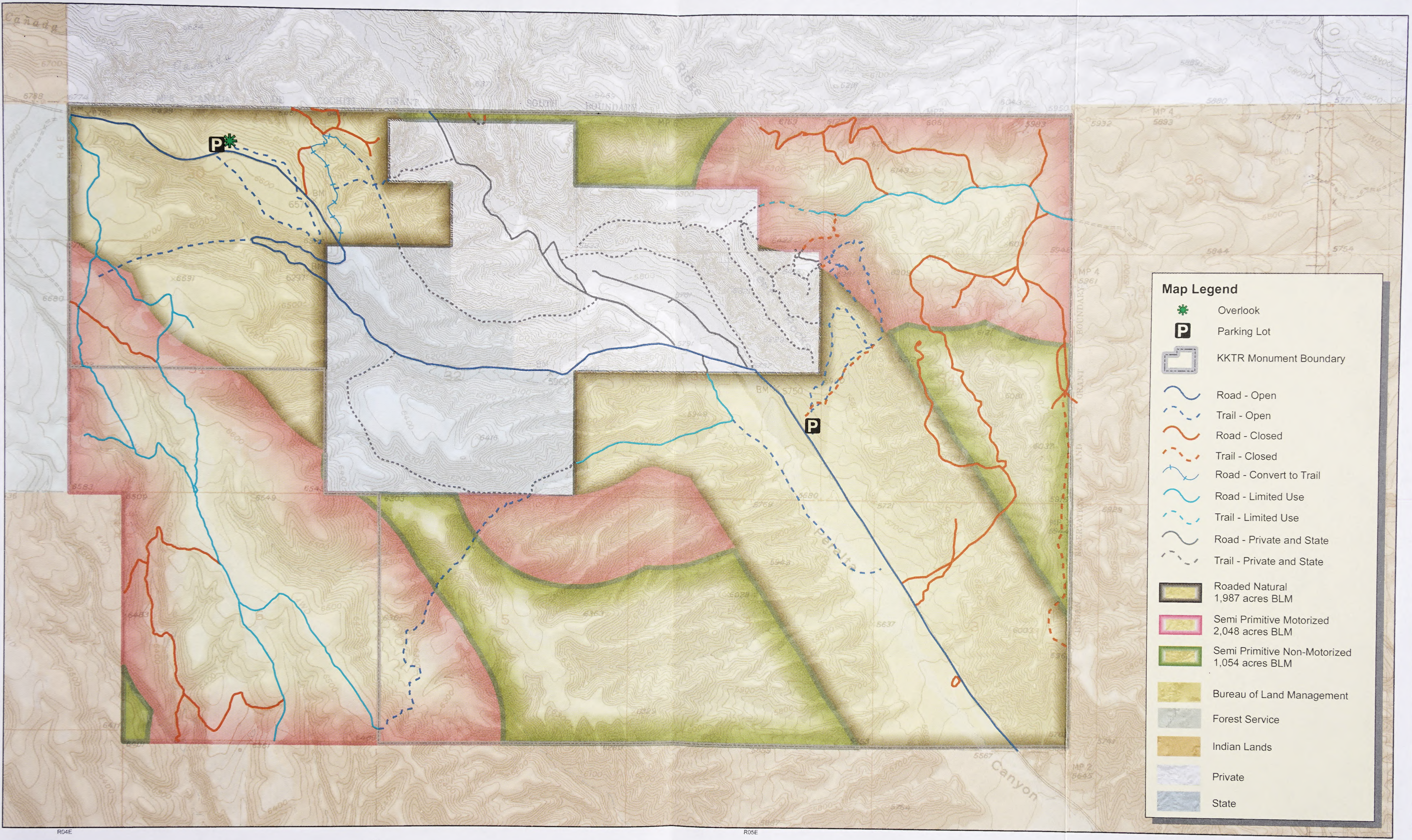
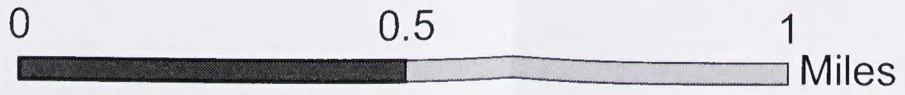
Map 14
ROS (Recreation Opportunity Spectrum) Classifications, Alternative B





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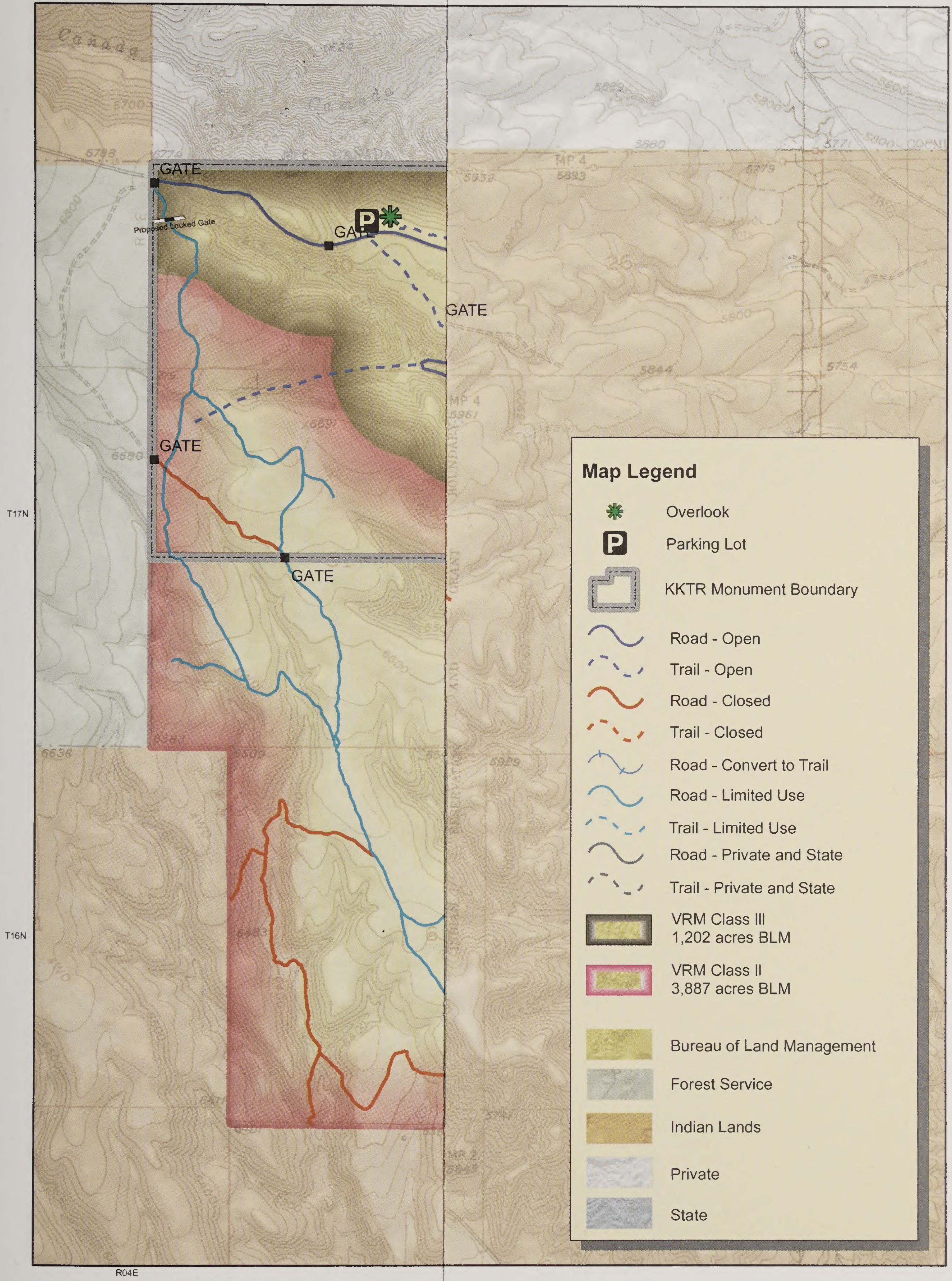
Datum: NAD 1983

Map 14
ROS (Recreation Opportunity Spectrum) Classifications, Alternative B



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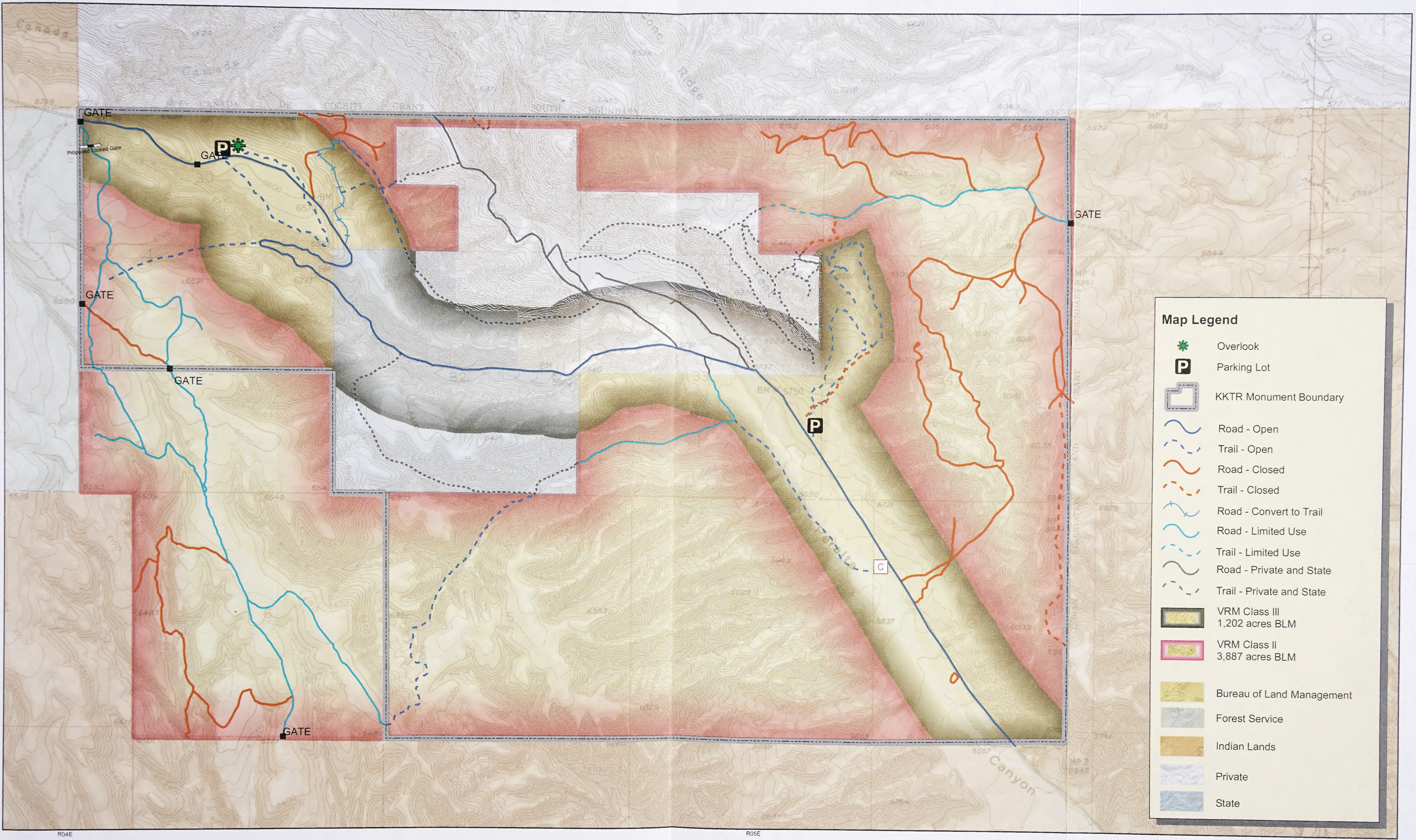
Map 15
VRM (Visual Resource Management) Classifications, Alternative B



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Projection: UTM Zone 13
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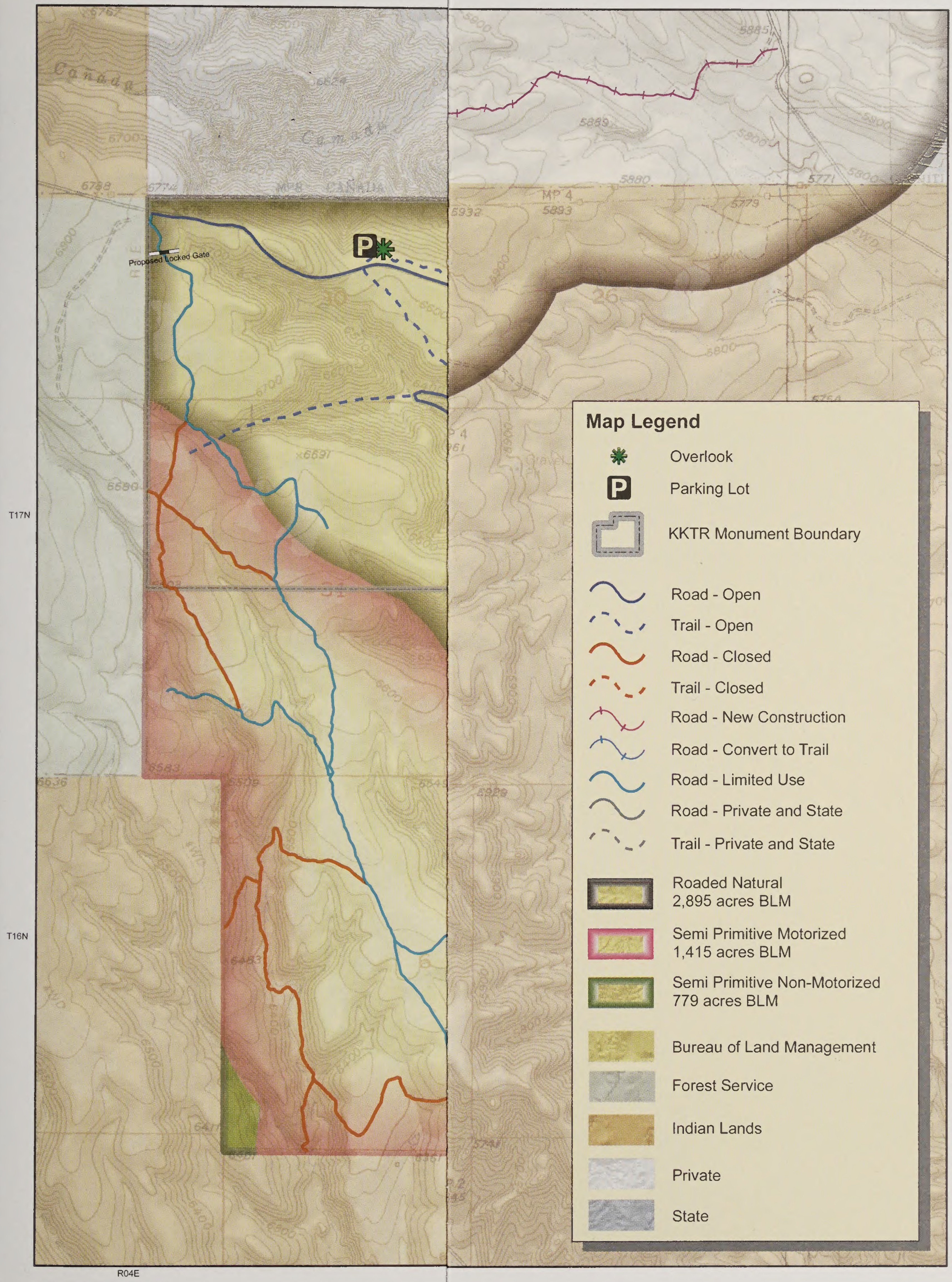
Map 15
VRM (Visual Resource Management) Classifications, Alternative B



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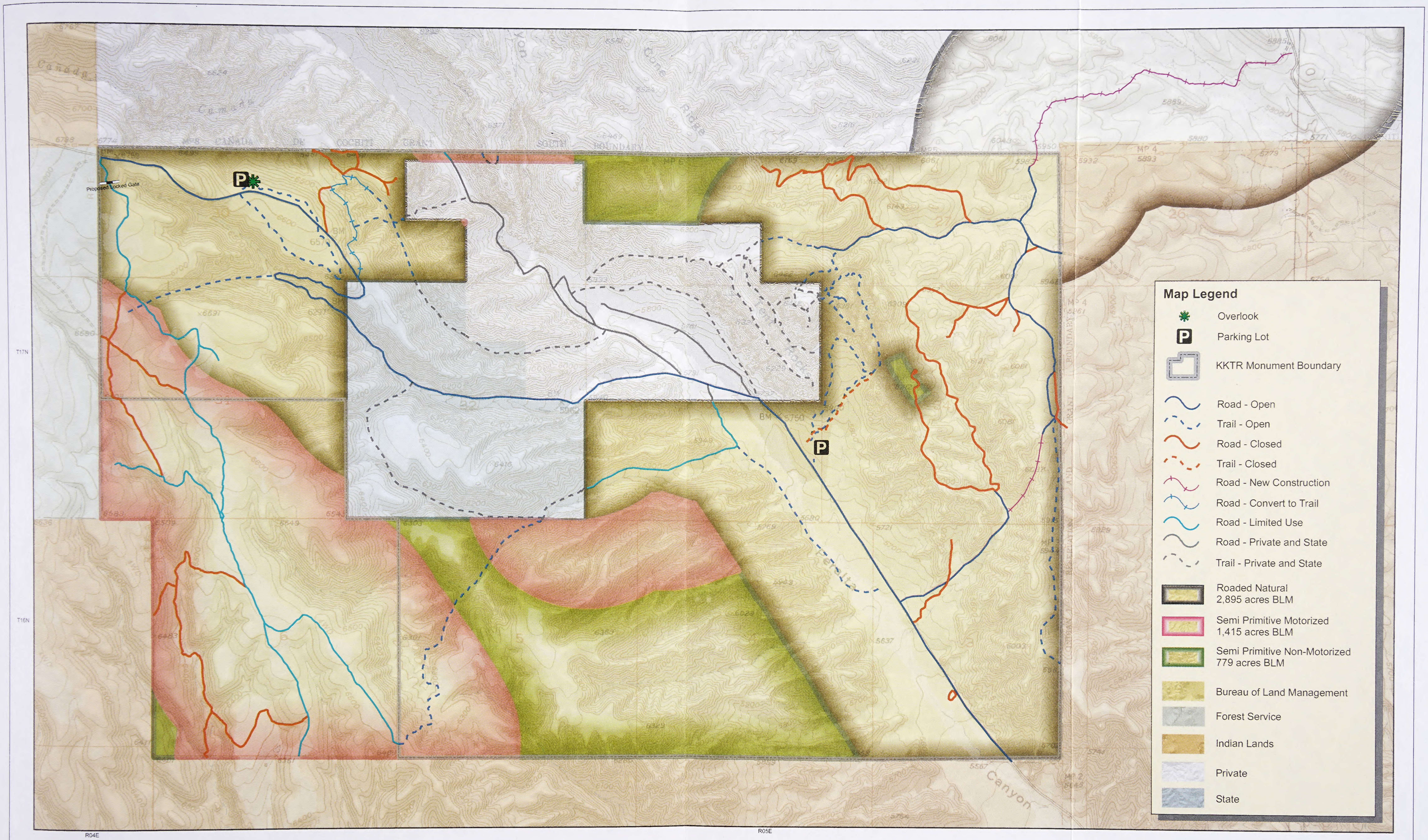
Map 16
ROS (Recreation Opportunity Spectrum) Classifications, Alternative C



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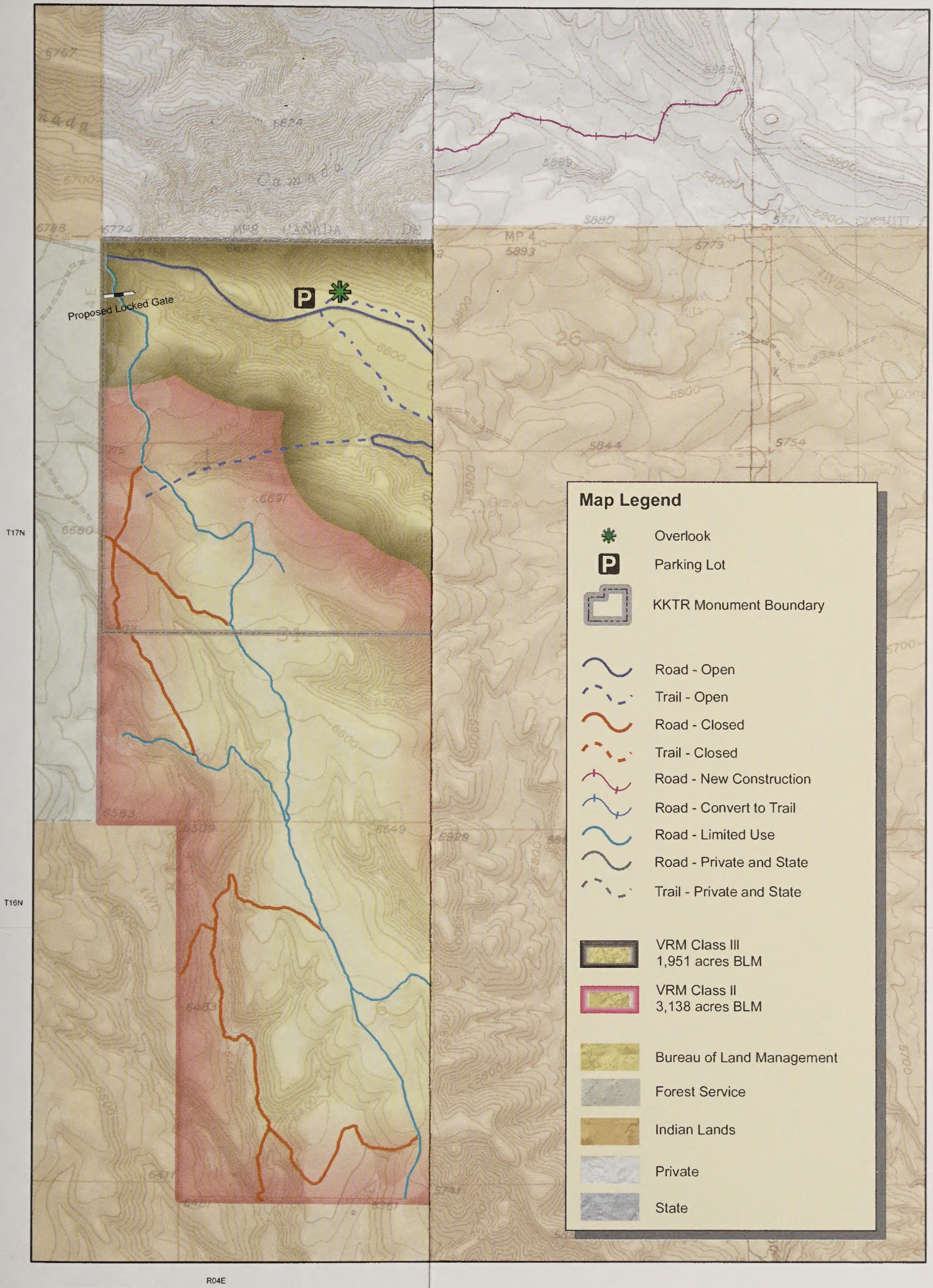
Projection: UTM Zone 13
Datum: NAD 1983

Map 16
ROS (Recreation Opportunity Spectrum) Classifications, Alternative C



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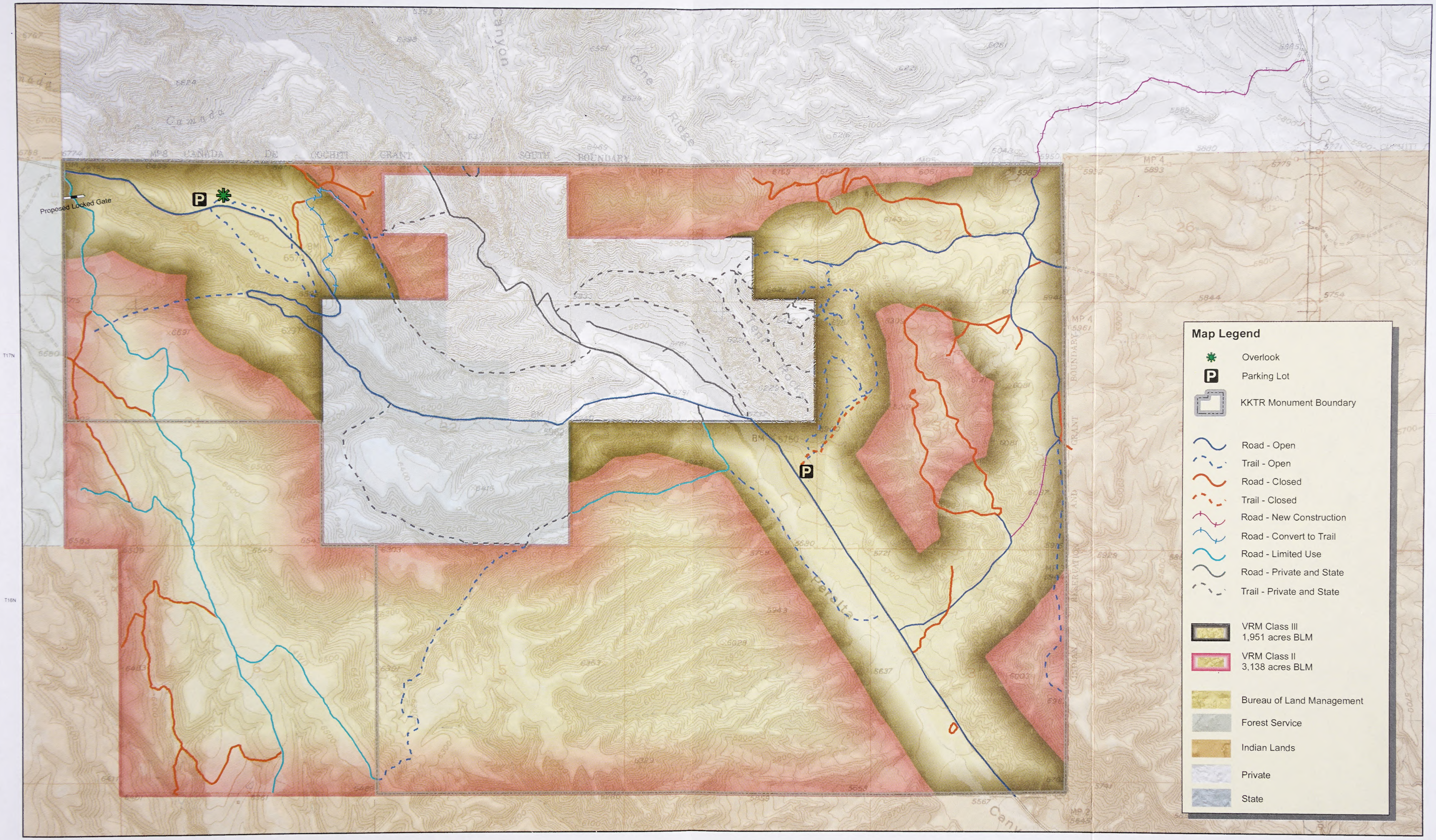
Map 17
VRM (Visual Resource Management) Classifications, Alternative C



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Projection: UTM Zone 13
Datum: NAD 1983

Map 17
VRM (Visual Resource Management) Classifications, Alternative C

Chapter 3

CHAPTER 3

AFFECTED ENVIRONMENT

INTRODUCTION

This chapter contains descriptions of the setting of the Planning Area, which includes the Monument, the Southwest Acquisition, and the North Edgeholding. Current conditions of the environment for each resource or use are described, with descriptions for the Southwest Acquisition added at the end of the chapter. This information provides the basis for evaluating the potential effects to these resources from the different land management proposals under each alternative.

PLANNING AREA AND NATIONAL MONUMENT

Access and Transportation

Travel within the Monument occurs on a variety of routes, including the following four route categories.

- Primary access route (BLM 1011/FS Road 266), including a portion authorized by Cooperative Agreement with Pueblo de Cochiti (Tribal Road 92);
- BLM facility maintenance roads;
- Unimproved trail routes (two-track roads); and
- Private access trail routes (unimproved).

Map 6 (in the map pocket) shows all routes within the Monument.

Primary access to the Monument from State Road 22 (paved) is through Pueblo de Cochiti land on about 2.75 miles of graveled road (Tribal Road 92) that is managed cooperatively by the BLM and the pueblo. This road, which the BLM and Sandoval County maintain, is the only access into the Monument. The road continues across BLM federal land for about 1.8 miles, then private land for about .99 mile, state land for about .95 mile, BLM land for about .67 mile, back again across state land for about .19 mile, and finally again across BLM land for the last 1.3 miles to the northwest corner of the Monument (refer to Map 6). This road has been in existence since July 13, 1908, on Cadastral Survey maps. (Note: Although the map for the Santa Fe National Forest shows Forest Service Road 266 crossing BLM land, no record exists of a right-of-way issued to the U.S. Forest Service by the Pueblo de Cochiti, the Bureau of Indian Affairs or the BLM.)

An Intergovernmental Agreement between the BLM and the Pueblo de Cochiti provides public access on Tribal Road 92 to resources and services. Occasionally this access road is closed by order of the Pueblo Governor. The BLM recognizes the need for privacy by the pueblo at certain times, and works with tribal members to notify the public when the need for road closure arises.

In the northwest corner of the Monument (Section 30, T. 17 N., R. 5 E.—refer to Map 6), this main access road (BLM Road 1011) is gated, seasonally locked and closed by the BLM in coordination with the Forest Service. The purpose of the closure is to minimize resource damage and relieve stress on big game.

A two-track road stems off BLM Road 1011 in this northwest monument corner (Section 30) about ¼ mile beyond the locked gate. This road branches off into several locations in the Monument, the Southwest Acquisition, and the Santa Fe National Forest to the west. A BLM two-track road for facility maintenance accesses a wildlife water catchment located within the north half of Section 31, T. 17 N., R. 5 E. about ½ mile from BLM Road 1011.

Another two-track road branches off to access the south half of Section 31, T. 17 N., R. 5 E. Recently the BLM has acquired this half section and adjacent private land in Section 6, T. 16 N., R. 5 E., using Land and Water Conservation

Funds. The two-track road will need to be maintained for administrative access to this Southwest Acquisition.

The northeast corner of the Monument has an east-west road crossing through Section 27, T. 17 N., R. 5 E. This road branches out and was once used to access several local pumice mine sites. The mine sites have been reclaimed, so this road is no longer needed for access. Several roads branching off this main access are washed out and would need to be evaluated for reclamation, access to federal land or development of a recreational trail.

A two-track road that stems off the main access road on the southeast (Section 3, T. 16 N., R. 5 E.) was used to access other pumice mines and also may have been used historically for woodcutting. The BLM has closed this road using signs and rocks, will most likely keep it closed and reclaim it. Other two-track unmaintained roads also used to access mine sites are currently washed out and impassable.

Several BLM-administered trails also exist in the Monument. They are shown on Map 6 and discussed below in the "Recreational Uses" section.

American Indian Uses and Traditional Cultural Practices

A diversity of deeply rooted cultural traditions is one of the special characteristics New Mexico offers to both local citizens and visitors. Proclamation 7394 designating the Monument recognizes this and directs the Secretary of the Interior to address actions to further the purposes of the American Indian Religious Freedom Act. The proclamation specifically recognizes the close ties that exist between the monument lands and the Pueblo de Cochiti. Other tribes including Santo Domingo Pueblo, Jemez Pueblo, and Zia Pueblo also have concerns in this area. In addition to American Indian tribes, local Hispanic families and communities also have used these lands for many years.

Pueblo Indian Uses of the Planning Area

Pueblo Indian religious beliefs and traditional cultural practices such as hunting and gathering of wild plants are intimately tied to specific places on the landscape. For many of these activities, a majority of tribal members may not visit or even know of these places, but they are important to the entire pueblo. Confidentiality is so important that Pueblo Indian people are sometimes bound by tradition to allow loss or destruction of traditional cultural places rather than speak openly of them. In accordance with the wishes of these groups, the BLM does not solicit specific information about traditional cultural places. Instead the agency seeks to keep interested pueblos informed about activities proposed within the Planning Area, giving them time to respond if traditional uses are likely to be affected. Major concerns include issues of access, privacy, and conflicting uses or proposed activities.

Repatriation

Because of their tribal histories, several American Indian groups may have affiliation with archeological materials found in the Planning Area, although they have not indicated that they maintain traditional cultural places there. These tribes include the Hopi and the Jicarilla Apache Nation. They have stated that they wish to be consulted whenever materials are found that are subject to the Native American Graves Protection and Repatriation Act, that is, human remains or objects of cultural patrimony.

Cultural Resources

National Monument

The earliest documented use of the Monument was during the Late Archaic Period, around A.D. 200. Ongoing surveys suggest that light scatters of chipped stone with occasional grinding stones, concentrations of burned rock, and buried hearths or fire pits dating from this time are fairly common in mesa-top settings within the Monument.

Throughout most of the remainder of human occupation, the Monument itself has been on the periphery of more intensively used areas. Although puebloan peoples moved into the Parajito Plateau area in large numbers beginning around A.D. 1200, these developments were more focused on the Rio Chiquito drainage to the east and northeast. One small masonry pueblo and the cavate room (cut into the soft rock) found near the Tent Rocks Picnic Area both probably date between A.D. 1200 and 1540, but the main area of settlement during these times was further east. A very poorly preserved petroglyph engraved on soft tuff in the slot canyon behind Tent Rocks may also be prehistoric, although this is not certain.

The Cochiti Mining District boomed between 1900 and 1910, and one of the major routes to Bland and other mining towns passed through Peralta and Colle Canyons. A well-preserved dugout, ruins of a house, and a rock and cement dam across Peralta Canyon are all that remains of the Rivera Homestead, which was established shortly before 1900. Between 1933 and 1942, a large Civilian Conservation Corps (CCC) camp existed on the Rivera property (an inholding within the Monument), which hosted workers building the road between Cochiti and Ponderosa, New Mexico. Almost nothing remains of the camp itself, but gabions (refer to the Glossary) and other erosion-control features built by CCC workers are scattered throughout the Monument.

Inventories conducted to date show that prehistoric sites are most common in mesa-top settings and are rare along the bottom of Peralta Canyon and its tributaries. In contrast, the CCC-constructed features and the camp itself are in the canyon bottom. So far, historical remains found on the mesa tops are relatively recent scatters of trash that resulted either from camping or deliberate dumping.

Planning Area

In the larger Planning Area, cultural resources on the private inholding property and in the western half of the North Edgeholding (Cañada de Cochiti Grant) are expected to be similar to those in the Monument. However, the eastern half of the North Edgeholding was densely occupied between A.D. 1100 and 1600, with almost 300 archeological sites dating to this interval being reported. Early in this period pithouses still may have been in use, but through time surface roomblocks made of masonry and jacal (refer to the Glossary) became more common. Other kinds of sites associated with this interval include agricultural features such as terraces, rock gardens, and dams. During the latest part of this period, Puebloan people built very large, aggregated pueblos, sites that often included hundreds of contiguous rooms built around one or more open plazas. One of these, Kuapa, is located in the North Edgeholding 2 or 3 miles east of the Monument. This site probably included over 1,000 rooms with multiple plazas, and was clearly one of the major population centers in this region.

Cochiti and Santo Domingo were among the pueblos occupied in 1540 when the Spanish arrived, and by the early 1600s missions had been established at these pueblos. In 1680 the Native People under Spanish dominion revolted, forcing the Europeans to retreat to El Paso. In the aftermath of this revolt, many of the pueblos moved their entire communities to defensible, mesa-top locations, anticipating that the Spanish would return. The Cochiti built a 200-room pueblo on a sheer-sided mesa about 1.5 miles north of the Monument. This site, known variously as Old Cochiti or Kotyiti became a major center of pueblo resistance during this period. Most remains pertaining to this episode are probably on lands owned by Cochiti Pueblo or the U.S. Forest Service.

In 1732 the Cañada de Cochiti Land Grant was issued to a scattered settlement of farmsteads and ranches along the Rio Chiquito near Old Cochiti (Kotyiti), and several Colonial Period Hispanic sites have been recorded in the eastern part of the grant. More recent historical remains are not well documented in the Planning Area.

Geology, Minerals and Paleontology

Geology

The Kasha-Katuwe Tent Rocks National Monument is located regionally along the western edge of the Rio Grande Rift (Depression). This rift, a fault or stress-caused crack in the rock layers, is north-south trending and runs from central Colorado to Mexico. In north-central New Mexico the rift system consists of large, northerly elongate, tilted fault blocks that form basins. The basins are bordered by mountainous structural uplifts. Sediments and volcanic rocks of the Miocene through the Pleistocene epochs (1.8 to 22.5 million years old) are associated with this basin and rift system.

The monument landscape has been shaped by volcanic deposition (pyroclastic ash flow), faulting, transport of materials, and erosion, with some processes continuing today. The Monument is situated south of the Jemez Mountains and southwest of the Pajarito Plateau but has physiographic similarities to both features. In the past, ash ejected from the Jemez range caused a volcano to collapse, creating the Valles Caldera, the main feature of this general area. Ash solidified into many rock layers known as the Bandelier Tuff, on which the Pajarito Plateau rests in the eastern Jemez Mountains. Over time, water draining to the Rio Grande from the caldera rim has helped to carve the monument area, creating a characteristic topography of elongated mesas, canyons, and other features.

Two different types of tent rocks are found at the Monument, formed in different materials by different geologic processes. One type formed in light-colored tuff; it is found near the parking area and by the head of the monument's slot canyon. Comparison of these tent rocks with those present in the Jemez Mountains suggests they formed in a similar way; i.e., the more resistant tuff was lightly cemented by precipitated microscopic minerals during volcanic events. The more resistant parts have been sculpted by erosion into cone-like shapes.

The second type of tent rock, and most common within the Monument, was formed through the erosion of stream-deposited sand and gravel layers. A cobble or boulder caps most of these teepee-shaped features, which are known as "hoodoos." Over time, rain and snowmelt have loosened and washed away sand and small pebbles. Then large cobble and boulder fragments have become more isolated, while sediment below them is protected from erosion. This has allowed the pedestals to become higher, and sculpted by wind into smoother forms.

Geologic faulting has helped to shape the area. The Pajarito fault (in the eastern monument area) is one of the longest active faults in New Mexico. Smaller faults that branch off the Pajarito provide educational opportunities as well as dramatic viewing. Hot water moving along these faults has provided mineral cement that helped form some layers of the erosional landscape, including tents and canyons.

Stratigraphically, the volcanic pumice and ash deposits within the Monument are in the Peralta Tuff Member of the Bearhead Rhyolite Formation. Also present are outcrops of the Bandelier Tuff north and east of the slot canyon. Overlying caps, sand, and gravels are in the Cochiti Formation, while Santa Fe Group sediments are present in stream channels (most notably in Peralta Canyon). The tent rocks are eroded from layers of Peralta Tuff and the Cochiti Formation.

Minerals

Minerals present in the Monument include perlite, pumice, sand and gravel, rhyolite, volcanic tuff, and obsidian. Of possible economic interest are perlite, pumice, and sand and gravel.

Perlite is present within the Monument, especially in Sections 28 and 29 (T. 17 N., R. 5 E.), and on the North Edgeholding (the Cañada de Cochiti Grant).

Pumice deposits are from the most recent eruptions within the Valles Caldera (about 40,000 years ago). Twenty-seven pumice mining features can be seen on a 1973 aerial photograph, including open cuts, several abandoned mines, and associated pumice waste piles. These are located in Sections 27-30 and 34 (T. 17 N., R. 5 E). A field inspection showed the features to be stable, with highwalls naturally sloped and vegetation growing. Now the pumice areas look more natural. They should remain part of the mining history of the area and may be useful for future interpretive studies.

Sand and gravel occur in channels, ephemeral streams and arroyos, and on some of the mesa tops. Of esthetic interest are Apache tears (obsidian nodules). They have weathered out of formation and can be seen scattered around the area, but cannot be collected.

To the north of the Monument is the Cochiti (Bland) mining district where gold, silver, and perlite were mined. Also present are mineralizations of copper and lead. Some of these minerals could be present in stream gravels within the Monument, but in very small, uneconomic quantities.

Mining claims in the monument area were made between 1975 and 1987, but all are now closed. The area also lies within Known Geothermal Resource Field #2, but no leasing has occurred and no geothermal activity is taking place within monument boundaries.

Under Presidential Proclamation 7394, all federal lands within the Monument are withdrawn from all forms of mineral entry. Therefore, no mineral development may occur there. [Note: Perlite, pumice, sand and gravel deposits occur elsewhere in New Mexico, so their withdrawal from location or sale here will not adversely affect industry supply.]

Paleontology

Current literature shows that no vertebrate or invertebrate fossils have yet been discovered within monument boundaries. Vertebrates living in New Mexico during the Tent Rocks formation would have been from the late Miocene, Pliocene, and Pleistocene geologic epochs (1.8 to 22.5 million years ago). Fossils found in the state representing these epochs are: gophers, moles, dogs, horses, rabbits, camels, glyptodonts (armadillos), beavers, pikas, pronghorn antelopes, mammoths, bison, and proboscideans (an early form of elephants). During this time the landscape was affected by explosive and other volcanic events, had little or no vegetation, and therefore little animal life. The lack of vegetation also would have resulted in greater erosion during rainstorms and snowmelt. However, some soil horizons present in the Monument indicate quiet periods during which vertebrates could have lived, died, been buried and preserved as fossils.

The BLM has an assistance agreement with the New Mexico Museum of Natural History and Science. Under this agreement, the museum collects and records vertebrate fossils found outside the permitting process on BLM federal land. This will ensure that the fossils will be available to the people of New Mexico and the U.S.

Lands and Realty

The Kasha-Katuwe Tent Rocks National Monument encompasses approximately 4,124 acres of federal lands and minerals (both administered by the BLM), approximately 521 acres of state land and minerals, 757 acres of private land (surface), 316 acres of private minerals, and 441 acres of federal minerals underlying private surface. [Table 3-1 shows the legal description of lands in the Monument. The slight differences between the legal acreages shown in this table and the GIS (Geographic Information Systems) acreages just given in the text are explained in Chapter 1, page 1-2, and shown in Table 1-1 on page 1-3. The analysis for monument acres done throughout the text is based on the GIS acreages given above.] The BLM's Southwest Acquisition contains approximately 965 acres. The North Edgeholding (Cañada de Cochiti Grant) directly north of the Monument (refer to Map 3 in Chapter 1) contains approximately 9,268 acres owned by the University of New Mexico. The 15,635-acre Planning Area is located in Sandoval County.

Land Use Authorizations

The Monument's federal land supports two grazing permits, one each for the Peralta and Tent Rock Allotments. Although mainly unimproved, the Monument contains the following structures: minor ranch improvements, a wildlife water catchment and historical structures associated with a homestead on the private lands, and the Veterans' Memorial Scenic Overlook. No other land use authorizations exist within the Monument. Existing land use plans for the area do not designate any utility corridors, nor does the Western Utilities Group's Regional Corridor Planning identify any corridors there. Rights-of-way and land use permit applications are authorized on a case-by-case basis with mitigation measures and stipulations developed to protect the resources and values for which the Monument was established.

Presidential Proclamation 7394 withdrew the federal lands (surface and subsurface) in the Monument from ". . . all forms of entry, location, selection, sale, or leasing or other disposition under the public land laws." Therefore, none of the public (federal) land or interest in land within the Monument is subject to disposal. The proclamation also provides for the automatic withdrawal of all new acquisitions within the Monument from mineral entry and leasing, and from disposal under the public land laws.

The BLM continues to acquire surface and mineral interests to consolidate ownership within or adjacent to the Monument (refer to Figure 3-1 for a photograph of some of these lands). Acquisitions are examined through the environmental analysis process, which includes public participation.

As private lands are acquired, mineral rights will also be acquired, when possible. All private lands are acquired only with the consent of the property owner. Proclamation 7394 states that lands and interest in lands within the Monument not owned by the United States will be reserved as a part of the Monument if and when the BLM acquires them.

Three private individuals or families own land within the monument boundaries. Under the Stockraising Homestead Act, the federal government transferred title to these private parcels in the early 20th century. The primary use of the properties has been subsistence farming and ranching.

Recently the BLM has worked with staff from the Conservation Fund (CF), a non-profit organization, to acquire approximately 1,722 acres of private inholdings and edgeholdings to be included in the Monument, using Land and Water Conservation Funds. Although the CF staff worked diligently, they were unsuccessful in acquiring the private lands within the Monument. However, the BLM now has acquired 965 acres of private land, the Southwest Acquisition, adjacent to the southwest portion of the Monument. The BLM also is working with a landowner to purchase a road easement across private land in T. 17 N., R. 5 E; this would be for about 1 mile of the main road through the Monument (BLM Road 1011).

Improvements

Improvements on the private properties within the Monument consist of a fence on or near the property boundaries, except along the north. The fence on the west is relatively new, with four wires and stays. Cattleguards have been installed where the public road intersects the property's boundaries. Although breached, an old dam still exists in the narrow canyon in the Section 29, SE¼SE¼, T. 17 N., R. 5 E. Below the dam, remnants of an old homestead and irrigation ditch are apparent. Also present are a small holding area for livestock and two water wells. Each well is housed in a small building, and one is outfitted with a gasoline pump as backup.

No significant improvements have been made on the property owned by the State of New Mexico, which has been encumbered by a grazing lease since the early 1970s. The grazing lessee drilled a 700-foot well in 1971 to water cattle on the southeast corner of the parcel. Small corrals and water facilities have been built, and portions of

TABLE 3-1

LEGAL DESCRIPTION OF LANDS IN THE KASHA-KATUWE TENT ROCKS NATIONAL MONUMENT [a]

(New Mexico Principal Meridian)

Legal Description	Acres	Legal Description	Acres
Public Surface: T. 16 N., R. 5 E. Sec. 3, lots 1 to 6, inclusive, S½NW¼ & SW¼;	506.98	Private Surface: T. 17 N., R. 5 E. Sec 28, S½SW¼, SW¼SE¼;	120.00
Sec. 4, lots 1 to 4, inclusive, S½N½ & S½;	636.52	Sec 29, NE¼SW¼, SE¼;	200.00
Sec. 5, lots 1 to 4, inclusive, S½N½ & S½.	638.24	Sec. 32, N½NE¼, SE¼NE¼;	120.00
Public Surface: T. 17 N., R. 5 E.		Sec 33, N½.	320.00
Sec. 27, lots 4 to 8, inclusive, S½;	343.09	Total private surface acreage	760.00
Sec. 28, lots 1 to 4, inclusive, N½S½ & SE¼SE¼;	222.56	Private Minerals: T. 17 N., R. 5 E. Sec 29, NE¼SW¼, SE¼;	200.00
Sec. 29, lots 1 to 4, inclusive, NW¼SW¼ & S½SW¼;	142.56	Sec. 32, N½NE¼, SE¼NE¼.	120.00
Sec. 30, lots 1 to 4, inclusive, S½;	342.00	Total private mineral acreage	320.00
Sec. 31, N½;	320.00	State Land & Minerals: T. 17 N., R 5 E. Sec. 32, lots 1 to 4, inclusive, SW¼NE¼, NW¼, N½S½.	520.95
Sec. 33, lots 1 to 4, inclusive, & N½S½;	321.80		
Sec. 34, lots 2 to 5, inclusive, N½ & N½S½.	640.12		
Total public surface acreage	4,113.87		

Note: [a] Refer to page 1-2 of Chapter 1 and Table 1-1 (page 1-3) for an explanation of the differences between the acreages in this table and those used throughout the text.

fence remain along some boundaries. The BLM, the New Mexico State Land Office, and Santo Domingo Pueblo are negotiating an exchange in which this property would be acquired by the BLM.

The North Edgeholding (Cañada de Cochiti Grant), which lies directly north of the Monument and is owned by the University of New Mexico, has recently been the subject of negotiation in and exchange with the New Mexico State Land Office for parcels in Albuquerque. More recently, UNM and the Pueblo de Cochiti have completed a land exchange in which the pueblo acquired 212 acres of Horn Mesa within the grant in exchange for a road easement to the grant's east end (refer to Map 3 in Chapter 1).

The Sandoval County zoning for the private property in the vicinity of the Monument is Rural Residential Agriculture. This zone provides suitable sites for rural activities and home developments. Minimum lot size for this type of zoning in New Mexico is ¾ acre. Subdivisions of five lots or less require only administrative summary review.

Livestock Grazing

The BLM manages two grazing allotments on federal land within the Monument. They are the Peralta Allotment and the Tent Rocks Allotment, as described in Table 3-2 below.
Vegetative inventory and monitoring studies are used to evaluate the need for changes in allotment grazing management. Changes in grazing

management should result in long-term improvement in vegetative condition for wildlife habitat and watershed protection as well as for livestock grazing use.

Both of these allotments are in the "Improve" management category. The criteria for placement in this category are: resource conflicts, inadequate grazing management, potential for improvement, and positive economic return. (Only one criterion has to be met for placement in this category.) The BLM will take management actions to improve existing resource condition and productivity, and enhance overall multiple use opportunities.

TABLE 3-2

LIVESTOCK GRAZING PERMITTED IN THE NATIONAL MONUMENT

Item	Tent Rocks Allotment (#0122)	Peralta Allotment (#0123)
Federal acres (percent of allotment)	2,080 (85)	2,008 (65)
No. of cows grazed (season)	15 (yearlong)	36 (spring & fall), 15 (summer)
Season of use	3/1-2/28	3/15-12/31
Preference (Animal Unit Months)	156 AUMs	147 AUMs
Range improvement projects permitted	• .75 mile of fence (CA) [a]	• 1 cattleguard (CA) [a] • 2 dirt stock tanks (RIP) • 2.25 miles of fence (RIP)

Note: [a] CA—Cooperative Agreement; RIP—Range Improvement Permit. Cooperative agreements authorize the building & maintenance of an improvement by both the BLM & a permittee. Range Improvement Permits authorize grazing permittees to build & maintain an improvement on BLM federal land solely with private funds.

Recreational Uses

Elevation of the Monument ranges from 5,570 feet to 6,760 feet above sea level. South-facing exposures provide recreational and educational opportunities during all seasons. A 2-mile National Recreation Trail was designated in 1992 and the area was designated as a Standard Amenity Fee Site in 2005.

The area surrounding the Monument is enhanced by existing destination and recreation sites such as Cochiti Lake (administered by the U.S. Army Corps of Engineers), Bandelier National Monument (administered by the National Park Service), Pueblo de Cochiti Golf Course, Dixon's Apple Orchard, Santa Fe National Forest (administered by the U.S. Forest Service), and the Valles Caldera National Preserve.

Partnerships and Cooperative Management Agreements

The Pueblo de Cochiti serves as the gateway community to the Monument, with 3 miles of the primary access road traversing the pueblo's lands. The BLM and the Pueblo de Cochiti signed a Cooperative Management Agreement in 1997, forming a partnership to provide for public access and to manage and maintain the Tent Rocks ACEC and fee site. To monitor and maintain the site, the pueblo receives $50,000 on an annual basis and 50 percent of the visitation fees collected.

Before the Monument was designated, the pueblo and the BLM had signed an Inter-Governmental Cooperative Agreement in 2000 for the cooperative management of tribal and federal lands at Tent Rocks. The intent of the Cooperative Agreement is to increase federal land management effectiveness, enhance natural resource program coordination, provide an opportunity for joint public outreach, and ensure a greater level of consistency and effectiveness in public and pueblo land use planning.

The BLM also formed a partnership with Sandoval County through an Assistance Agreement for road maintenance, and has an informal agreement with the University of New Mexico for geologic interpretation.

Recreation Opportunity Spectrum

For the *Rio Puerco Resource Management Plan*, the BLM completed a Recreation Opportunity Spectrum (ROS) inventory of the Tent Rocks ACEC. The management emphasis is on interpreting geologic and scenic values, and on intensive recreational use, specifically Semi-Primitive Non-Motorized recreational opportunity. BLM Road 1011, which traverses the Monument, is part of the zone classified as Roaded Natural.

The ROS provides a framework for defining classes of outdoor environments for recreational opportunities (refer to Appendix E). These opportunities can be described in terms of three principal components, the activity, the setting, and the experience. Possible mixes of these components are arranged along zones. The ROS management objectives for the Semi-Primitive Non-Motorized and Roaded Natural zones located within the boundaries of the Tent Rocks ACEC/National Monument are defined as follows.

The Semi-Primitive Non-Motorized zone is managed to be largely free from the evidence of humans, their restrictions and controls. Motorized vehicle use is prohibited. Projects should be designed to protect natural values. Recreational activities occurring in this zone include hiking, picnicking, viewing scenery, and nature study. Frequency of BLM staff contact with users is low.

The Roaded Natural zone is managed to provide a natural-appearing environment with moderate evidence of the sights and sounds of humans. Motorized use is permitted. Concentration of users is moderate, with evidence of other users widespread. Resource modification and use practices are evident, but harmonize with the natural environment. Developed facilities for motorized use are provided, and placement of management facilities is favored in this zone. Recreational activities include picnicking, nature study, and viewing cultural and natural resources. Staging areas for backcountry use and for interpretation of geological features occur in this zone. Frequency of BLM staff contact with visitors is moderate to high.

Recreational Activities

Since the area was assigned ROS zones of Semi-Primitive Non-Motorized and Roaded Natural, limited management activities have taken place. In accordance with Title 43 of the Code of Federal Regulations (CFR), Part 8365.2, the Monument is for day use only [under supplementary rules published in the *Federal Register* on May 10, 1996 (61 FR 92: 21479-83)].

Passive recreational activities include hiking, photography, environmental education, scientific studies, bird watching, wildflower viewing, picnicking, and creating artwork. Mountain bike riding is limited to the existing access road (BLM Road 1011).

One permit has been issued for horseback riding, limited to the southern portion of the Monument. One Special Recreation Permit has been issued to a commercial outfitter for guided hiking tours, limited to the exiting trails.

The Planning Area is popular for university and professional scientific societies conducting geologic field trips, and serves as an outdoor laboratory for environmental education classes. International Migratory Bird Day (in 2003 and 2004) and three National Public Lands Day events (in 2000, 2001, and 2003) have been observed at the Monument. Environmental education classes and recreation (hiking) are the major demands by the public. School groups use the Monument for research and educational field trips. An average school group consists of 80 people, including students, teachers and parents.

Motion picture productions made at Tent Rocks have included “Silverado,” “Lonesome Dove,” “Young Guns II,” “High Desert Kill” and “Earth II.” Since monument designation, commercial film permits limit such activity to hand-held cameras only, no props, the involvement of three to five persons, and filming themes that are compatible with the passive recreational uses of the Monument (e.g., advertising for sportswear).

For visitors wishing to spend the night, the Cochiti Lake area (located 5 miles east of the Monument) contains facilities for camping, large groups and recreational vehicles.

Visitation and Fee Site

In 1996, the Tent Rocks ACEC became a Fee Site, with fee collection beginning in March 1998. The monument brochure outlines the fee schedule and permit requirements. [Note: Golden Eagle, Age and Access Passport holders are not required to pay the monument entrance fee, nor are public and private school groups.]

A traffic counter was used from 1998 until 2000, and in 2001, the BLM began using the fee envelopes to approximate the number of visitors. One fee envelope represents one vehicle with an average of 2.9 users per vehicle. The Monument is visited primarily by New Mexico residents from the Albuquerque and Santa Fe metropolitan areas, as well as from the City of Rio Rancho (located in Sandoval County, this is the fastest-growing community in New Mexico). Many international visitors also frequent the Monument. An annual report to the Congress required for the fee site reflects the visitation trend shown in Table 3-3 below.

Fee collection began in 1998. Fees are collected on an honor system under which the visitor deposits a fee envelope into an iron pipe. Under BLM fee collection regulations, the fees are collected and counted by the agency and the Pueblo de Cochiti on a weekly basis. If visitation is higher during the spring and autumn months, fees are collected and counted twice a week.

All fees collected are returned to the site, which assists greatly in defraying costs for operation and maintenance. Under the Cooperative Management Agreement between the Pueblo de Cochiti and the BLM (signed in 1997), 25 percent of the fees collected were returned to the pueblo for operations (monitoring and

TABLE 3-3

TREND IN USER NUMBERS FOR KASHA-KATUWE TENT ROCKS ACEC/NATIONAL MONUMENT, 1998-2004

Year	No. of Users	Year	No. of Users
1998	8,600	2002	45,000
1999	17,200	2003	49,500
2000	14,600	2004	50,000
2001	25,053		

maintaining the site and visitor services) in 1997-98; this percentage was increased to 35 in 2000. Table 3-4 below shows the fees collected between 1998 and 2004, with the facilities developed and funds contributed for operations by the pueblo.

Trails

A National Recreation Trail (NRT) was designated in 1992 and is for foot travel only. This trail contains two segments that provide opportunities for bird watching, geologic study and observation, photography and plant identification. Both segments of the NRT begin at the designated monument parking area and are maintained by the BLM.

The first segment, the Cave Loop Trail, is 1.2 miles long and is rated as easy. The more difficult segment, the Canyon Trail, is a 1.5-mile, one-way trek into a narrow canyon with a steep (630-foot) climb to the mesa top. There, visitors have excellent views of the Sangre de Cristo, Jemez, and Sandia mountains and the Rio Grande Valley.

Approximately .5 mile of the Canyon Trail is built under the principles of universal design and access (as required by the Americans with Disabilities Act). This portion of the trail begins at the trailhead and ends at the entrance to the canyon. This segment meets the needs of parents with strollers, small children, seniors, and visitors using wheelchairs. The BLM is also building a 1-mile trail segment near the Scenic Overlook in the northwest corner of the Monument using the same design principles.

Interpretation

An interpretive kiosk is located at the National Recreation Trailhead. The BLM has completed basic bird and wildflower guides as well as updating the kiosk and monument brochure. Interpretive panels on the area's geology are also being prepared. The Monument is a self-guided experience, although occasionally BLM staff-guided tours may be available.

Facilities

With user fees paying part of the cost, the BLM upgraded parking and restroom facilities in 1999 and 2000. In 2002, after monument designation and to accommodate increased visitation, the agency expanded the parking areas. By popular demand indicated in two recreation surveys (one administered by the BLM Albuquerque District and the second by the BLM Washington Office), trash receptacles, picnic tables and group shelters were added to provide visitors with a welcome rest area after hiking.

Also in 2002, the agency improved and graveled the 5-mile access road to the parking area and trailhead, in part to reduce dust at the Pueblo de Cochiti. In 2003, the agency improved and upgraded an additional 3.5 miles of road to the Scenic Overlook, located near the western boundary of the Monument.

TABLE 3-4

FEES COLLECTED AT NATIONAL MONUMENT, FISCAL YEARS 1998-2004, WITH FUNDS CONTRIBUTED FOR BLM FACILITY DEVELOPMENT & OPERATIONS BY THE PUEBLO DE COCHITI

Fiscal Year	Total $$ Collected	BLM Facilities Developed or Improved	Cochiti Operations Funded ($$)
1998	12,165	Entrance gate, brochures, universally accessible vault toilet	3,041
1999	20,035	Parking area improvements, picnic tables & trash receptacles	5,008
2000	22,938	Picnic tables, NRT improvements [a], brochures	8,028
2001	26,502	Shade shelters for picnic tables, brochures	9,276
2002	36,856	Second vault toilet, benches, portal sign, brochures	12,899
2003	45,924	Split rail fencing, informational signs, brochures	16,073
2004	44,958	NRT improvements to ADA (universal design & access) standards [a], benches, Scenic Overlook improvements, brochures	15,735

Note: [a] NRT—National Recreation Trail; ADA—Americans with Disabilities Act

Road improvements included concrete low-water crossings, improved signage for vehicles, dust abatement, and a small parking area at the overlook.

The BLM has installed a steel gate approximately ¼ mile west of the Scenic Overlook access road (BLM Road 1011/Forest Service Road 266). This road connects with State Road 290, which passes through the town of Ponderosa and connects to State Road 4 at Jemez Pueblo. The high-clearance portion of Forest Service Road 266, which is dirt, traverses the Santa Fe National Forest and a portion of the Jemez Pueblo Reservation. Jemez Pueblo has an access gate adjacent at the western boundary of the Monument, and a U.S. Forest Service access gate is located near Ponderosa (about 20 miles west of the monument boundary). The BLM and Jemez Pueblo coordinate seasonal road and gate closures (during the winter months and extreme fire conditions) with the Forest Service, Jemez Ranger District.

As outlined in BLM Environmental Assessment NM-010-2003-036, the BLM is completing or planning the following additional improvements: developing a water well to supply domestic drinking water for the main parking and picnic facilities, and installing a vault toilet and possibly a picnic facility near the Scenic Overlook.

A dedication of the Scenic Overlook as a Veterans' Memorial was held on April 3, 2004, honoring all veterans. A cast bronze commemorative plaque has been installed at the overlook.

Economic Benefits

The BLM is considering additional facilities or programs at the Monument that could provide economic benefits and career opportunities for the Pueblo de Cochiti. These include the following.

- Paving the 5-mile access road (Tribal Route 92) to reduce dust and improve safety at the pueblo;
- A Pueblo de Cochiti Youth Career Development Program;
- A Pueblo de Cochiti Law Enforcement /Public Safety Officer Program;
- An Information/Fee Collection Station.

Additionally, the BLM and several federal, county and state agencies signed a Memorandum of Understanding with the Pueblo de Cochiti to continue discussions about the design, construction and maintenance of a Monument Visitor/Cultural Center. The center will be built on pueblo land and leased by various agencies or supported by in-kind services.

Private Inholdings within the Monument

Approximately 757 acres of private inholdings are located within the monument boundary. Hikers often venture onto the private land to complete a loop that uses the National Recreation Trail as the starting point. The BLM has posted signs at the NRT trailhead and at strategic points along the trail informing the public about the private land boundaries. These boundaries are also outlined on a map at the kiosk. The landowners have fenced off a portion of their property and posted private land signs.

Riparian Areas

The term "riparian" refers to a unique area that represents the transition between permanently saturated wetlands and drier uplands. Such areas have vegetative or physical characteristics that reflect the influence of permanent surface or subsurface water. Lands along, adjacent to, or connected with rivers and streams with stable water levels are typical of riparian areas.

Not all areas along stream channels (streamside zones) develop into riparian areas. Lack of soil, climatic variables, and wide variation in streamflow, geology, or use-related factors can limit the creation or maintenance of a riparian area. The shorelines of the Peralta Canyon stream channel within the Monument (approximately 2.05 miles) may not support riparian vegetation because flow is intermittent (occasional); the area may also lack the subsurface water needed to support such vegetation.

The soils in the Peralta Canyon streamside zone develop from flood-deposited sediments. Managing Peralta Canyon for possible riparian area development within the monument boundary will require the BLM to coordinate agency efforts with adjacent private landowners.

Social and Economic Conditions

For purposes of social and economic analysis, no population resides in the Monument itself. The Monument lies within U. S. Census Tract 103.01 in Sandoval County, New Mexico, and makes up only 2.16 percent of the tract's 250,010 acres. Table 3-5 lists numbers and the range of income for the major population groups within 5 miles east and south of the monument boundary (Census Tract 9401).

Few of the income dollars stay within the local community because the trade centers of Santa Fe and Albuquerque draw away much of the spending. However, some of this income is spent in Bernalillo and Rio Rancho, and remains within Sandoval County for one round of spending before it moves on.

Sandoval County has a population of 89,908 by 2000 census figures, or approximately 4.9 percent of New Mexico's 2000 census total of 1,819,046. Almost a third (32 percent) of the county's population is under 25 years of age, while the state has 31 percent in this age group. For those 65 years and older, the figures are 11 percent for the county and 12 percent for the state.

At the regional level, Sandoval County is combined with Bernalillo and Santa Fe Counties for statistical purposes. This region includes nearly 5.6 percent of New Mexico's acreage and over 42 percent of the state's population. Table 3-6 shows comparative population and economic information.

The regional population growth (2.1 percent per year) between 1990 and 2000 was slightly higher than that for the state (2.0 percent). The median age for the regional counties, ranging from 35.0 to 37.9 years (especially in Santa Fe County), is higher than for New Mexico at 34.6 years. Minorities in the region include American Indian and Hispanic or Latino at 5.4 percent and 41.7 percent respectively, compared to 9.5

and 42.1 percent respectively for New Mexico. Except for Sandoval County, both owner- and renter- occupied household size was smaller in the region than in New Mexico. Vacant housing units were only 8.1 percent in the region, compared to 13.1 percent in New Mexico. Owner-occupied units were 61.2 percent of all units in the region, compared to 60.8 percent in the state. Renter-occupied units were 30.7 percent for the region, compared to 26.1 percent for New Mexico.

The labor force in the region totals 442,183 (*New Mexico Labor Market Report*, Volume 33, No.6, July 31, 2004) with a current unemployment rate of 5.3 percent. Wage and salary jobs in the region account for 83.1 percent of the jobs (refer to Table 3-7 for comparative employment figures). Proprietor's jobs account for the other 16.9 percent. Comparable figures for New Mexico are 80.88 percent and 19.51 percent respectively. Services (health, legal, business, other) account for 35.0 percent of the jobs in the region. Retail trade at 17.7 percent and government at 16.5 percent are the other leading sectors. Comparable figures for New Mexico are 31.3 percent services (health, legal, business, other), 19.5 percent government, and 17.8 percent retail trade. The 1970 to 2000 new job figures for the counties making up the region show the greatest growth in the services sector (health, legal, business, other) at 39.51 percent, compared to 39.05 percent for New Mexico.

In the three-county region, new income in the services sector (health, legal, business, and other) grew more than all other sectors in the region. However, the 26.21 percent increase was far below the 39.51 percent job increase in the state. The per-capita income growth in the region between 1970 and 2000 was from approximately $13,930 to approximately $24,530, just over a 76 percent increase. Table 3-8 shows comparative income figures. [Note: Factors affecting the value of the dollar have not been considered.]

Under an agreement with the BLM, the Pueblo de Cochiti receives annual funding of $50,000 plus 50 percent of the visitor fees collected to care for and maintain the monument facilities. Currently this care and maintenance involves part-time employment for four persons that amounts to approximately $40,000 per fiscal year.

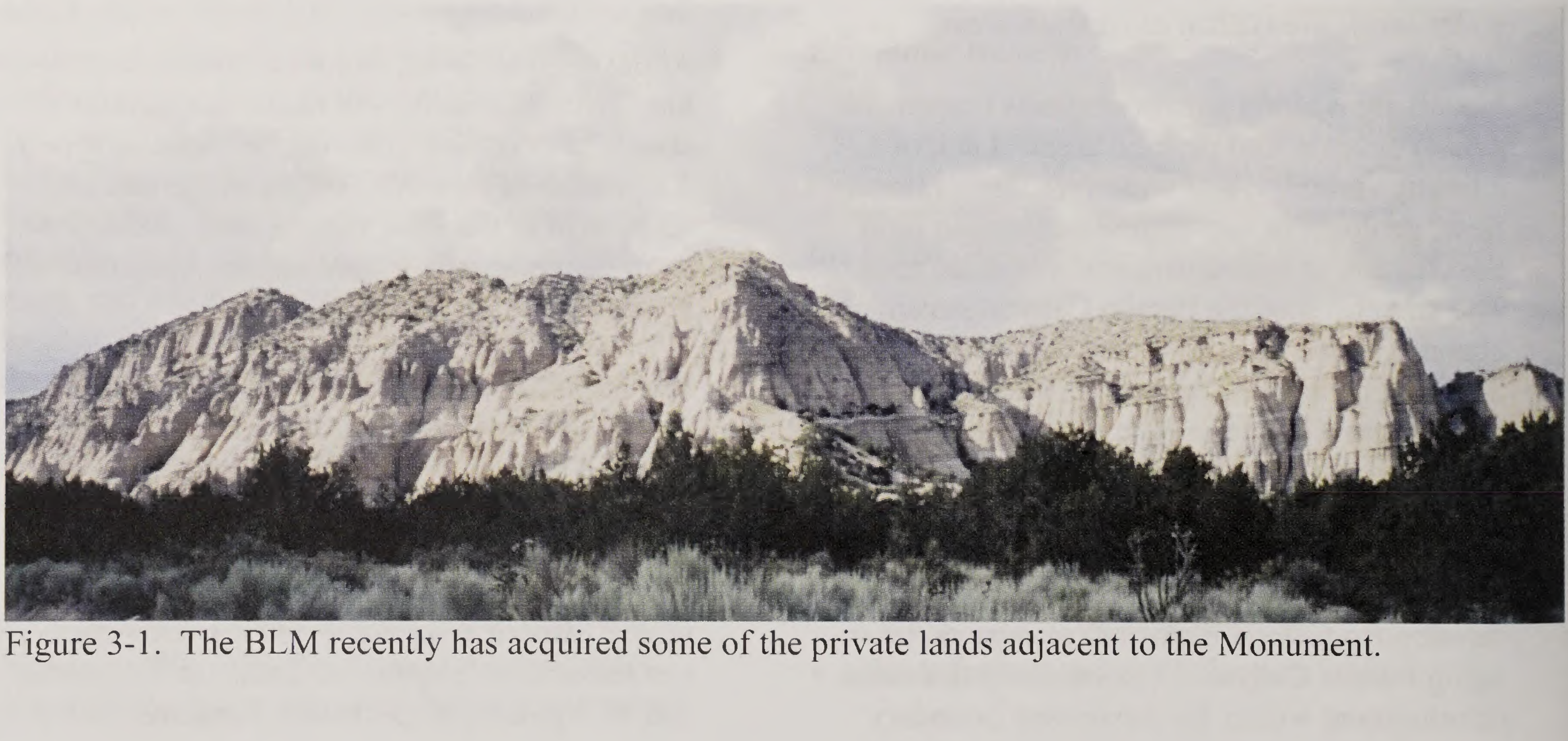

Figure 3-1. The BLM recently has acquired some of the private lands adjacent to the Monument.

TABLE 3-5

2000 CENSUS INFORMATION FOR POPULATIONS NEAR THE MONUMENT

Census Block Group, Tract 9401	Total Population	No. (%) of Persons Listing Selves as “American Indian & Alaska Native Alone”	Household Income	
			No. of Families w/<$10,000	No. of Families w/>$100,000
1	394	26 (.07)	4	16
2[a]	507	483 (95.27)	21	3
3[b]	601	186 (30.95)	16	11
Total	1,502	695 (46.27)	41	30

Notes: [a] Includes the Pueblo de Cochiti.
[b] Includes the Village of Cochiti Lake.

TABLE 3-6

POPULATION & ECONOMIC INFORMATION, 2000

Analysis Factor	County			Region	State
	Bernalillo	Sandoval	Santa Fe		
Population (Total, Year 2000)	556,678	89,908	129,292	775,878	1,819,046
% Change/Year, 1990-2000	1.6	4.2	3.1	2.1	2.0
Under 20 Years Old (%)	1.3	3.3	2.1		1.5
65 Years Old and Over (%)	2.7	4.9	3.8		3.0
Median Age	35.0	35.1	37.9		34.6
Population by Race (%) White	70.8	65.1	73.5		66.8
Black	2.8	1.7	0.6		1.9
Other	22.2	16.9	22.8		21.8
Hispanic or Latino (of any Race)	42.0	29.4	49.0		42.1
Not Hispanic or Latino	58.0	70.6	51.0		57.9
Population by Household Type Total Housing Units	239,074	34,866	57,701	331,641	780,579
Vacant Housing Units	18,138	3,455	5,219	26,812	102,608
Owner-Occupied Units	140,634	26,257	35,985	202,876	474,445
Renter-Occupied Units	80,302	5,154	16,497	101,953	203,526
Average Household Size Owner-Occupied	2.6	2.9	2.6		2.7
Renter-Occupied	2.2	2.5	2.1		2.4

TABLE 3-7

EMPLOYMENT BY INDUSTRY

Type of Employment	County			Region	State
	Bernalillo	Sandoval	Santa Fe		
Total Employment	397,016	33,494	82,462	512,972	978,863
Wage & Salary	338,317	25,728	62,169	426,214	791,672
Proprietor's Employment	58,699	7,766	20,293	86,758	187,191
Farm & Agricultural Services	4,127	704	1,630	6,461	35,623
Farm	603	391	462	1,456	21,691
Agricultural Services	3,524	313	1,168	5,005	13,932
Mining	807	127	531	1,465	19,475
Manufacturing (including forest products)	21,959	N/A	2,575	24,534	48,979
Services & Professional	280,284	N/A	55,679	335,963	622,452
Transportation & Public Utilities	19,181	2,334	1,512	23,027	43,384
Wholesale Trade	18,625	N/A	1,631	20,256	33,830
Retail Trade	68,793	5,720	16,081	90,594	174,030
Finance, Insurance & Real Estate	31,857	2,207	7,040	41,104	64,774
Services (Health, Legal, Business, Other)	141,828	8,573	29,415	179,816	306,434
Construction	25,675	2,557	5,814	34,046	61,668
Government	61,164	4,022	16,233	84,419	190,666

TABLE 3-8

INCOME BY TYPE
(millions of Year 2000 dollars)

Type/Source of Income	County			Region	State
	Bernalillo	Sandoval	Santa Fe		
Farm & Agricultural Services	68	4	23	95	82
Farm	7	2	4	13	-56
Agricultural Services	61	3	18	82	139
Mining	13	3	18	34	130
Manufacturing (including forest products)	904	N/A	73	977	1,278
Services & Professional	7,696	N/A	1,413	9,109	9,651
Transportation & Public Utilities	723	81	50	131	856
Wholesale Trade	718	N/A	62	780	653
Retail Trade	1,233	78	315	1,626	1,478
Finance, Insurance & Real Estate	822	33	202	1,057	974
Services (Health, Legal, Business, Other	4,199	151	784	5,134	5,690
Construction	862	93	188	1,143	1,086
Government	2,686	127	585	3,398	3,715
Non-Labor Income	4,765	572	1,403	6,740	10,515
Dividends, Interest & Rent	2,904	310	1,030	4,244	5,687
Transfer Payments	1,862	261	374	2,497	4,828
Total Personal Income	15,190	2,019	3,886	21,095	39,943
Non-Farm Income	15,183	2,017	3,882	21,082	39,370
Farm Income	7	2	4	13	573
Per-Capita Income (in thousands)	27,253	22,247	29,949	24,531	21,931

Soils

The Soil Survey of Sandoval County Area, New Mexico (USDA, SCS 1987) delineates eight soil map units within the Kasha-Katuwe Tent Rocks National Monument. Based on their position on the landscape, these can be generally grouped into valleys, mesa tops and fan terraces, and steep mesa sideslopes, as shown in Table 3-9 below and on Map 4 (in the map section of the document).

Threatened, Endangered, and Sensitive Wildlife Species

Federally Listed Species

The U.S. Fish and Wildlife Service (FWS) has identified six federally listed threatened or endangered (T&E) and candidate wildlife species as possibly occurring in Sandoval County, New Mexico (refer to the correspondence in

Landscape Position, Soil Map Unit Name	Soil Map Unit No.	Monument Acres [a]	Landforn General L tion	Inclusion(s)	Other Information
Valleys Waumac-Bamac Association, 1-7% slopes	300	498.4	• Waumac Valley fl & toe slc • Bamac— Along bc of Peralt yon	ver wash in arroyo annels; small areas Royosa soils on roll- g fan terraces	Well-drained (both) • Waumac—subject to occasional flooding from snowmelt & summer storms • Bamac—periodic flows w/large sediment loads from adjacent landscapes during summer storms
Totavi loamy sand, 0-5% slopes	52	8.4	Valley floo N end, Pera Canyon	ver wash	Available water capacity is moderate; SMU is subject to rare, brief periods of flooding from July through October
Mesa Tops & Fan Terraces Cochiti-Montecito association, 1-30% slopes	104	1,200.2	Fan terraces W side Mor ment	ajete soils at base of me sideslopes; aumac soils on lley floors	
Pinitos loam, 1-15% slopes	206	37.9	Fan terraces cuestas, NW ner Monum	arham & Hickman ils on valley floors; enefee soils on shale; ochiti soils on ter- ces	
Flugle-Waumac complex, 1-8% slopes	307	452.5	• Flugle— fan terra between royos • Waumac narrow r & along royo cha NE corn Monume	nall areas of Royosa Fragua soils	

TABLE 3-8

INCOME BY TYPE
(millions of Year 2000 dollars)

Type/Source of Income	County			Region	State
	Bernalillo	**Sandoval**	**Santa Fe**		
Farm & Agricultural Services	68	4	23	95	82
Farm	7	2	4	13	-56
Agricultural Services	61	3	18	82	139
Mining	13	3	18	34	130
Manufacturing (including forest products)	904	N/A	73	977	1,278
Services & Professional	7,696	N/A	1,413	9,109	9,651
Transportation & Public Utilities	723	81	50	131	856
Wholesale Trade	718	N/A	62	780	653
Retail Trade	1,233	78	315	1,626	1,478
Finance, Insurance & Real Estate	822	33	202	1,057	974
Services (Health, Legal, Business, Other	4,199	151	784	5,134	5,690
Construction	862	93	188	1,143	1,086
Government	2,686	127	585	3,398	3,715
Non-Labor Income	4,765	572	1,403	6,740	10,515
Dividends, Interest & Rent	2,904	310	1,030	4,244	5,687
Transfer Payments	1,862	261	374	2,497	4,828
Total Personal Income	15,190	2,019	3,886	21,095	39,943
Non-Farm Income	15,183	2,017	3,882	21,082	39,370
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TABLE 3-9

SOILS IN THE KASHA-KATUWE TENT ROCKS NATIONAL MONUMENT
(refer also to Map 4 in the map section)

Landscape Position, Soil Map Unit Name	Soil Map Unit No.	Monument Acres [a]	Landforms & General Location	Depth	Surface/Subsurface Textures	Permeability	Hazard of Water Erosion	Vegetation	Parent Material [b]	Inclusion(s)	Other Information
Valleys Waumac-Bamac Association, 1-7% slopes	300	498.4	• Waumac—Valley floors & toe slopes • Bamac—Along bottom of Peralta Canyon	Deep (both)	• Waumac—loamy sand over fine sandy loam & gravelly fine sandy loam subsoil • Bamac—gravelly loamy sand over very gravelly loamy sand & very gravelly coarse sand subsoil	Moderately rapid to very rapid (both)	Moderate (both)	• Current—piñon & juniper trees • Historical—riparian ecosystem in selected areas [c]	• Waumac—alluvium from sandstone & igneous rocks • Bamac—mixed alluvium	River wash in arroyo channels; small areas of Royosa soils on rolling fan terraces	Well-drained (both) • Waumac—subject to occasional flooding from snowmelt & summer storms • Bamac—periodic flows w/large sediment loads from adjacent landscapes during summer storms
Totavi loamy sand, 0-5% slopes	52	8.4	Valley floors, N end, Peralta Canyon	Deep	Loamy sand to depth of 60 or more inches	Very rapid	Slight	Ponderosa pine trees w/grass understory	Alluvium from tuff & pumice	River wash	Available water capacity is moderate; SMU is subject to rare, brief periods of flooding from July through October
Mesa Tops & Fan Terraces Cochiti-Montecito association, 1-30% slopes	104	1,200.2	Fan terraces, W side Monument	Deep (both)	• Cochiti—gravelly loam over gravelly clay loam subsoil with very gravelly sandy loam substratum • Montecito—loam over sandy loam & gravelly sandy loam substratum	Slow to moderately slow	Moderate	Piñon & juniper trees w/grass understory	• Cochiti—gravelly alluvium • Montecito—eolian material, colluvium, & alluvium from shale & sandstone	Cajete soils at base of some sideslopes; Waumac soils on valley floors	
Pinitos loam, 1-15% slopes	206	37.9	Fan terraces & cuestas, NW corner Monument	Deep	Loam over clay loam subsoil	Moderate	Moderate	Piñon & juniper trees w/sagebrush & grass understory	Derived from sandstone & shale	Sparham & Hickman soils on valley floors; Menefee soils on shale; Cochiti soils on terraces	
Flugle-Waumac complex, 1-8% slopes	307	452.5	• Flugle—broad fan terraces between arroyos • Waumac—on narrow ridges & along arroyo channels, NE corner Monument	Deep (both)	• Flugle—loam over sandy clay loam subsoil • Waumac—loamy sand over fine sandy loam & sandy loam subsoil	• Flugle—Moderate • Waumac—Moderately rapid	Moderate (both)	Mainly grasses w/overstory of scattered juniper trees	• Flugle—alluvium & eolian material derived from sandstone & shale • Waumac—alluvium from sandstone & igneous rocks	Small areas of Royosa & Fragua soils	

oncluded)

zard Vater sion	Vegetation	Parent Material [b]	Inclusion(s)	Other Information
ight oth)	Mainly grasses & shrubs w/widely scattered juniper trees	Mixed alluvium (both)	Waumac soils on toe slopes & valley floors; Cochiti soils on valley sides; rock outcrop on escarpments & ledges	*Includes main Tent Rocks cliffs (N side of Monument) & two other areas (flanking SE & SW sides of Peralta Canyon, w/few rock outcrops)
ht on pes 5%; h on pes 5% oth)	Mainly piñon & juniper trees w/understory of grasses	- Cochiti—alluvium - Espiritu—alluvium & colluvium	Small areas of Waumac soils on valley sideslopes; Teco soils on broad ridges	**Largest SMU in Monument; occurs on most slopes flanking Peralta Canyon
ight oth)	Mainly ponderosa pine w/scattered Douglas fir, alligator juniper & piñon trees, w/understory of grasses & shrubs	- Laventana—alluvium & colluvium derived from andesite & granite - Mirand—colluvium derived from rhyolite & tuff	Small areas of Cypher soils on summits; Totavi soils on valley floors; rock outcrop on escarpments & ledges; Cajete soils on mountain slopes	

ations and differs slightly from the Monument total found elsewhere in this document.

ecosystem in selected areas.

Appendix F). These species are described in Table 3-10. In addition to the federally listed species, those species considered sensitive by the BLM, state wildlife agencies, or tribal governments and potentially occurring within the Monument have been evaluated for this RMP (refer to Appendix G). Those species identified as having potential for occurrence in the Monument are listed in Table 3-11 below.

In accordance with Section 7 of the Endangered Species Act, BLM staff biologists have prepared a Biological Evaluation to determine the potential for impacts to the six federally listed T&E species identified as potentially occurring in the Monument. Data sources include federal, state, and tribal agencies, the Biota Information System of New Mexico (BISON-M), and field surveys conducted by BLM biologists. Detailed species descriptions of these species' life history, status, distribution, and potential for occurrence are presented in the Biological Evaluation, which is on file at the Rio Puerco Field Office.

BLM biologists conducted field surveys to determine the presence of suitable habitat for T&E wildlife species within the Monument. However, because of the land ownership patterns and the specific habitats used by these species, they may occur within Sandoval County but not specifically on federal lands within the Monument. The potential for these species' presence and their habitats within the area are examined in Table 3-10, while potential impacts on them resulting from implementing the various alternatives are discussed in Chapter 4. Of the six federally listed T&E species identified as potentially occurring in Sandoval County, none has been identified as being present or having suitable habitat within the Monument.

Sensitive Species

As part of the analysis for this RMP, BLM biologists consulted the lists of sensitive species maintained by the BLM, Navajo Tribe, State of New Mexico, U.S. Forest Service (USFS), and FWS to determine both the potential presence of sensitive species and any potential impacts from implementing the actions identified in the RMP. In addition to the six federally listed species discussed above, 45 state-listed species, sensitive species, and species of special concern, as well as BLM and USFS sensitive species were evaluated. Of the 52 species evaluated, 13 either are present or have suitable habitat within the Monument. The 13 species include nine mammals and four birds, as listed in Table 3-11 below.

Vegetation

Major Land Resource Area

The Natural Resources Conservation Service (NRCS) has developed descriptive classifications of Major Land Resource Areas (MLRAs), which are large regions that represent nearly homogeneous areas of soil, climate, land use, water resources, elevation, topography, and potential natural vegetation. The Monument lies within MLRA No. 36; Western Plateau (WP-2), New Mexico and Arizona Plateaus and Mesas.

The WP-2 MRLA consists of broad mesas and plateaus interspersed with numerous deep canyons and dry washes, mesa breaks, and canyon walls. Scattered throughout the region are isolated volcanic peaks, cones and lava flows. It is characterized as semi-arid, with distinct seasonal precipitation and temperature patterns associated with a continental climate. Average annual precipitation approaches 10 to 16 inches.

The soils and climate contribute to a vegetative community of grasslands and mixed shrublands. At upper elevations are piñon-juniper woodlands characterized by alligator juniper, oneseed juniper, shrub live oak, bullgrass, little bluestem, piñon ricegrass, and blue grama.

TABLE 3-9 (concluded)

Landscape Position, Soil Map Unit Name	Soil Map Unit No.	Monument Acres [a]	Landforms & General Location	Depth	Surface/Subsurface Textures	Permeability	Hazard of Water Erosion	Vegetation	Parent Material [b]	Inclusion(s)	Other Information
Steep Mesa Sideslopes											
Espiritu-Bamac association, 15-55% slopes	345	562.8	• Espiritu—toe slopes & north-facing slopes* • Bamac—ridges & south-facing slopes*	Deep (both)	• Espiritu—very gravelly, fine sandy loam over very gravelly, sandy clay loam subsoil • Bamac—very gravelly, loamy sand over very gravelly, loamy sand subsoil	• Espiritu—moderate • Bamac—very rapid	Slight (both)	Mainly grasses & shrubs w/widely scattered juniper trees	Mixed alluvium (both)	Waumac soils on toe slopes & valley floors; Cochiti soils on valley sides; rock outcrop on escarpments & ledges	*Includes main Tent Rocks cliffs (N side of Monument) & two other areas (flanking SE & SW sides of Peralta Canyon, w/few rock outcrops)
Cochiti-Espiritu association, 15-55% slopes	353	2,641.7	• Cochiti—north-facing slopes** • Espiritu—south-facing slopes**	Deep (both)	• Cochiti—extremely gravelly loam over very gravelly clay loam subsoil • Espiritu—very gravelly loam over very gravelly, sandy clay loam subsoil	• Cochiti—slow • Espiritu—moderate	Slight on slopes <35%; high on slopes >35% (both)	Mainly piñon & juniper trees w/understory of grasses	• Cochiti—alluvium • Espiritu—alluvium & colluvium	Small areas of Waumac soils on valley sideslopes; Teco soils on broad ridges	**Largest SMU in Monument; occurs on most slopes flanking Peralta Canyon
Laventana-Mirand very cobbly loam, 15-55% slopes	603	36.9	Mountain slopes; small steep area in NW corner Monument	Deep (both)	• Laventana—very cobbly silt loam • Mirand—very cobbly loam over cobbly clay subsoil	• Laventana—moderate • Mirand—very slow	Slight (both)	Mainly ponderosa pine w/scattered Douglas fir, alligator juniper & piñon trees, w/understory of grasses & shrubs	• Laventana—alluvium & colluvium derived from andesite & granite • Mirand—colluvium derived from rhyolite & tuff	Small areas of Cypher soils on summits; Totavi soils on valley floors; rock outcrop on escarpments & ledges; Cajete soils on mountain slopes	

Notes: [a] Acreage includes private and state land within Monument boundaries; acreage total is based on GIS mapping calculations and differs slightly from the Monument total found elsewhere in this document.

[b] Technical terminology is defined in the Glossary (in the back of the document).

[c] Area still contains remnants & artifacts of riparian vegetation that indicate the potential for reestablishing a riparian ecosystem in selected areas.

Appendix F). These species are described in Table 3-10. In addition to the federally listed species, those species considered sensitive by the BLM, state wildlife agencies, or tribal governments and potentially occurring within the Monument have been evaluated for this RMP (refer to Appendix G). Those species identified as having potential for occurrence in the Monument are listed in Table 3-11 below.

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TABLE 3-10

FEDERALLY LISTED THREATENED, ENDANGERED & CANDIDATE WILDLIFE SPECIES THAT MAY OCCUR IN SANDOVAL COUNTY

Species Names, Common & Scientific	Status [a]	Range & Habitat Association	Potential for Occurrence in Monument
bald eagle—*Haliaeetus leucocephalus*	T	Throughout the Monument, bald eagles may be present as migrants or wintering birds. While no known nesting sites have been identified within the Monument, potential nesting habitat is limited to riparian habitat along the Rio Grande. Riparian areas & wetlands are primary habitat for winter roost areas & during migration.	None. No suitable habitat in Monument.
black-footed ferret—*Mustela nigripes*	E	Historically reported from all but the southernmost part of New Mexico (i.e., the area south of the Mogollon Plateau, east of the Pecos Valley). Last confirmed sighting in 1934. Suitable habitat consists of black-tailed prairie dog colonies or complexes (80 acres or greater) or Gunnison's prairie dog colonies or complexes (200 acres or greater).	None. No suitable habitat in Monument. Species is presumed extirpated from New Mexico.
Mexican spotted owl—*Strix occidentalis lucida*	T	In New Mexico, reported in several counties, including San Juan, Sandoval, McKinley, Bernalillo, Torrance, Lincoln, & Eddy. Found primarily in canyons, mixed conifer forests, pine-oak woodlands & riparian areas. Nests on platforms & large cavities in trees, on ledges, & in caves.	None. No suitable habitat in Monument.
Rio Grande silvery minnow—*Hybognathus amarus*	E	Occurs in a variety of habitats in the Rio Grande with shifting sand or silty bottoms. Perennial stretches of the river between the Santo Domingo Pueblo (Sandoval Co.) & Socorro are critical habitat.	None. No suitable habitat in Monument.
Southwestern willow flycatcher—*Empidonax trailli extimus*	E	Subspecies breeds primarily in New Mexico (NM), Arizona, & southern California. Most records in NM are from Rio Grande Valley & westward, w/largest colony on Gila River. Nesting habitat includes shrubs & trees in willow thickets, shrubby mountain meadows, & deciduous woodlands along streams, lakes & bogs.	None. No suitable habitat in Monument.
Western yellow-billed cuckoo—*Cocyccus americanus*	C	Known to occur throughout Wyoming & New Mexico. Potential habitat defined as open woodlands, streamside willow & alder groves. Mature riparian woodlands along the Rio Grande may provide suitable habitat.	None. No suitable habitat in Monument.

Note: [a] T—Threatened, E—Endangered, C—Candidate.

TABLE 3-11

SENSITIVE WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE MONUMENT

Species Names, Common & Scientific	Status [a]	Range & Habitat Association	Potential for Occurrence in Monument
Birds			
ferruginous hawk —*Buteo regalis*	FWS, BLM, USFS, NESL Group3	In New Mexico, occurs primarily as a rare to uncommon transient & winter migrant statewide. Breeding is less common in New Mexico. Nest sites include trees, ledges, large rock outcrops, & low cliffs in sagebrush valleys & rolling grasslands.	Possible but unlikely as the result of marginal nesting & foraging habitat. No sightings documented in Monument.
American peregrine falcon—*Falco peregrinus anatum*	FWS, BLM, NM-T, NESL Group 4	In New Mexico, breeds locally in mountain areas & migrates statewide. Nests are often located on cliff faces with overhanging ledges or rock outcrops.	Possible but unlikely as the result of marginal nesting & foraging habitat. No sightings documented in Monument.
gray vireo—*Vireo vicinior*	NM-T	In New Mexico, recorded in the Guadalupe & San Andres Mountains, the San Juan River Valley, Navajo Lake, & in the vicinity of Santa Fe. Records for the Sandia & Manzano Mtns. include only rare transients. Uses upland habitats in desert canyons, foothills, & open woodlands.	Could occur within suitable habitats in Monument, but habitat is marginal. No sightings documented in Monument.
loggerhead shrike —*Lanius ludovicianus*	FWS, BLM	Widespread summer resident in New Mexico, & known to occur throughout the state. Primary habitat is open country interspersed w/pastures, grasslands, & hedgerows below 9,000 feet. Nesting habitat includes sagebrush areas, desert scrub, piñon-juniper woodlands, & woodland edges.	Could occur within suitable habitats in Monument.
Mammals			
Western small-footed myotis—*Myotis ciliolabrum melanorhinus*	FWS, BLM	In New Mexico, known to occur throughout much of the state. Found in woodlands, forests, & desert communities. Known to roost in caves, abandoned buildings, under rocks, in crevices, & under pine bark. Occurs at elevations between 5,200 & 7,050 feet.	Could occur in Monument. Impacts are unlikely, but large, dead, standing ponderosa pines that are not a hazard will be left in place.
Yuma myotis—*Myotis yumanensis*	FWS, BLM	Known to occur in Sandoval, Rio Arriba, & Chaves Counties. An uncommon seasonal visitor to desert, grassland, woodland, & riparian areas from 4,000 to 7,000 feet. Known to roost in buildings, caves, & crevices.	Could occur within suitable habitats in Monument, although roosting habitat is marginal.
little brown myotis—*Myotis lucifugus carissima*	NM-S	Known to occur in Sandoval County. Known roost sites in buildings.	Possible but unlikely as the result of marginal roosting & foraging habitat.

TABLE 3-11, concluded

Species Names, Common &Scientific	Status [a]	Range & Habitat Association	Potential for Occurrence in Monument
Mammals, concl'd Occult little brown bat—*Myotis lucifugus occultus*	FWS, BLM	Widely distributed throughout western & central New Mexico, & known to occur in McKinley & Sandoval Counties. Uses riparian habitats associated w/permanent water sources such as streams, drainage ditches, & lakes. Also are known to roost in human-made structures, caves, tunnels, & hollow trees, including piñon-juniper, ponderosa pine & mixed conifer forests. Most common at higher elevations between 6,000 & 9,000 feet.	Possible but unlikely as the result of lack of riparian habitat in Monument.
long-legged myotis—*Myotis volans interior*	BLM, NM-S	Known to occur throughout New Mexico. Habitat usually ponderosa pine & higher elevations.	Possible but unlikely. Monument below species' normal habitat elevation.
long-eared myotis—*Myotis evotis*	FWS, BLM	Found throughout western New Mexico. Uses piñon-juniper woodlands & coniferous forests, & roosts in caves & buildings, generally above 6,700 feet.	Could occur in Monument in woodlands of upper mesa areas.
spotted bat—*Euderma maculatum*	BLM, USFS R3, NM-T	Known to occur in Sandoval & Rio Arriba Counties. Typical habitat includes rocky areas near perennial water & other habitats including riparian, piñon-juniper woodlands, & ponderosa pine. Roosts in crevices of cliffs or under large loose rocks.	Possible but unlikely. Roosting habitat present, but foraging habitat lacking
Townsend's big-eared bat—*Plecotus townsendii*	FWS, BLM	Fairly common in New Mexico; known to occur in Sandoval, Rio Arriba, & Chaves Counties. Primarily a cave dweller; bat most dependent upon inactive mines in the southwest. Can be found in desert shrublands, piñon-juniper woodlands, coniferous forests & mixed-grass prairies. Roosts in trees, caves, or human-made structures. Only subspecies of bat commonly found in New Mexico during winter.	Could occur within suitable habitats in Monument.
big free-tailed bat—*Nyctinomops macrotis*	FWS, BLM	Known to occur in Sandoval & Rio Arriba Counties. A summer resident that prefers coniferous to mixed woodlands, & depends on rocky cliffs for roosting. Can be found in piñon-juniper woodland, pine & mixed coniferous forests, desert grassland, & other desert communities. In addition to roosting on rocky cliffs, also may roost in caves, rock fissures, bridges, & buildings.	Could occur within suitable habitats in Monument.

Note: [a] FWS—U.S. Fish & Wildlife Service species of concern; BLM—BLM sensitive species; USFS—U.S. Forest Service sensitive species; NM-S—State sensitive; NM-T—State listed as threatened; NESL Group 3—Navajo Endangered Species List, Group 3—any species or subspecies that is likely to become an endangered species within the foreseeable future, throughout all or a significant portion of its range on the Navajo Nation.

Climate, Vegetation and Fire

Climate, vegetation and fire are closely interrelated. Climate (e.g., temperature, precipitation, solar degree days, growing season) is the major determinant of vegetation patterns. Fire is one part of the natural ecological processes that support, maintain and/or change a given plant community.

The potential natural plant communities within the Planning Area are highly diverse as the result of the variability of soils, elevation, annual and seasonal precipitation, temperature, degree of slope and aspect, and disturbance. Annual moisture comes primarily in the form of rainfall during the months of July, August, and September, although the amount of wintertime snow, sleet, or rain is sometimes significant. The rainfall patterns generally favor warm-season perennial vegetation, while the temperatures tend to favor cool-season vegetation, creating a complex community of plants on any given ecological site. This community is quite susceptible to disturbance, and is at or near its productive potential only when major native species of both the warm- and cool-season plants are present.

As described in the Sandoval County Soil Survey (NRCS), the potential natural plant community of woodlands and forest stands within the Planning Area consists of 70 percent piñon-juniper woodlands, 28 percent grass/shrub rangeland communities, and 2 percent ponderosa pine forests. Based on an evaluation of local fire history information (Allen 2002), the young ages of most piñon-juniper trees of the Pajarito Plateau located near Los Alamos, NM (Julius 1999, unpublished data), and soils data (McFadden 1996), it appears that many upland mesa areas now occupied by dense piñon-juniper woodlands were formerly more open, with fewer trees and well-developed herbaceous understories. These smaller plants protected the soil from excessive erosion during intense summer thunderstorms, and provided a largely continuous fuel supply that allowed surface fires to spread, thus maintaining these vegetative types.

According to meteorologists and climatologists throughout the southwest, drought conditions have existed from 1994 or 1995 to the present. This regional drought has caused trees to become moisture stressed and susceptible to insect invasion and damage. As the drought has progressed, trees have become unable to repel the piñon-bark beetle (*Ips pini*) with tree pitch. Populations of the beetle have exploded, permitting the insects to move into adjoining trees and woodlands. The beetle passes up the smaller trees (less than 3 inches in diameter) in favor of the older and larger trees, which are highly susceptible to the insect damage that eventually results in the trees' death. The extent of this outbreak within the Planning Area is obvious; on average, 88 piñon trees per acre are dead from the Ips beetle (Borland, 2004).

Noxious Weeds

Federal and state governments have legally declared more than 500 invasive plants to be "noxious weeds" (Skinner, Smith, and Rice 2000). Plants are defined as noxious weeds if they are carriers or hosts of damaging insects or diseases, or if they are overly aggressive, difficult to manage, parasitic or poisonous. Most noxious weeds are not native to the United States.

Most noxious weeds are early successional species that prefer highly disturbed sites such as those along rivers and streams, trails, trailheads, roadsides, building sites, wildlife bedding grounds, overgrazed areas, and campgrounds (Baker 1986, Sheley & Petroff 1999). Parendes and Jones (2000) have found that the presence of exotic plant species is highly correlated with sunlit soil and frequent, severe disturbances, such as those resulting from road traffic and road maintenance activities such as grading. Chicoine (1984) has found that spotted knapweed is readily spread along transportation corridors.

Road construction and maintenance activities mix soil layers, increasing soil microbial activity. Weeds exploit these newly available nutrients efficiently (Best, *et al.* 1980; Belcher & Wilson 1989). This may be one reason that the density of weedy plants increases with the intensity of disturbance (Jensen 1995).

One mechanism of weed seed transport is by motorized and nonmotorized vehicles (i.e., bicycles). A study in Kakadu National Park in Australia found that weed seed was transported into the park on tourist vehicles and was more likely to be transported by four-wheel-drive vehicles that had been driven off road (Lonsdale & Lane 1994). A study in California found that native plant cover and the number of species were greatest in sites farther than .6 mile from roads and least in sites 30 feet or less from roads. Conversely, noxious and invasive plant cover was greatest closer to roads (Gelbard & Harrison 2003). Vehicle undercarriages can trap and transport weed seed (Sheley & Petroff 1999). It is reasonable to believe that heavy equipment used for construction and/or maintenance that disturbs the ground would transport weed seed more readily than recreational vehicles.

In general, managing weeds has been compared to fighting fires (Dewey 1996). In both cases, the work includes prevention, early detection and control, management, and restoration. Prevention is the most effective and least expensive weed management strategy. Once a species has been introduced to a site, early detection and control or elimination is the next best plan of action. When a species has become well established in an area, the strategy must be to contain and control the infestation using integrated weed management techniques (e.g., biological control agents, herbicides, manual and mechanical means) and restoration with desirable vegetation. Small infestations outside the boundary of the main infestation should be detected early and eliminated, if possible, much as spot fires outside the main fire line are detected and put out.

The most vulnerable part of the Monument to weed species introduction and establishment is along the improved gravel road from Pueblo de Cochiti to the Monument (Tribal Route 92) and beyond to the Peralta Canyon Scenic Overlook (BLM Road 1011). Other susceptible areas include but are not limited to the public parking area, the developed picnic grounds and trails, and the channel banks and terraces found along the Peralta Canyon stream channel. These natural and human-caused disturbances produce suitable soil seedbed for weed germination and establishment when the seeds' moisture and temperature requirements are met. Weeds may also become established where activities disturb the soil and remove the competitive natural vegetation.

Downy brome grass or "cheatgrass" (*Bromus tectorum*) is the dominant non-native, invasive species in the Planning Area. This grass occurs under most piñon and juniper trees, because the micro-climate found there, including shade and litter (organic matter and carbon), appears to favor its establishment and maintenance. It has become widespread throughout New Mexico and the Western United States, and therefore is not a high-priority weed for management because of the low likelihood of successfully controlling it. Around the piñon-juniper woodlands, downy brome establishment may be encouraged by surface-disturbing activities including but not limited to fuelwood cutting and harvest; use of haul roads or prescribed and wildland fire; and woodland thinning, lopping and scattering or shredding of tree stems and branches. No other noxious plant species have been found in the Monument.

As visitor days increase, the area is being exposed to a higher probability of other non-native, invasive species being introduced and established. Early detection and control is vital in preventing the establishment and spread of noxious weeds. The BLM's Environmental Assessment, *Noxious Weed Management in the Upper Rio Puerco Watershed* (EA NM-010-99-038—on file at the Rio Puerco Field Office), addresses these concerns and provides for an integrated management program for noxious weed prevention and control.

Special-Status Plants

The New Mexico Rare Plant Technical Council has identified twelve plant species of concern for Sandoval County (refer to Appendix H). Sandoval County contains no federally listed threatened or endangered plant species. Two state plant species of concern for Sandoval County could occur in the Planning Area, though neither has been identified there. These are the Santa Fe milkvetch (*Astragalus feensis*), and Santa Fe blazingstar (*Mentzelia springeri*). Santa Fe blazingstar lives in disturbed pumice soils, while Santa Fe milkvetch inhabits gravelly soils in piñon-juniper woodlands in the general vicinity of the Pajarito Plateau.

The Planning Area also contains a population of point-leaf manzanita (*Arctostaphylos pungens*), a shrubby species known primarily from the Sierra Madre of Mexico. This population is one of the northernmost in the United States and represents a unique plant adapted to the cooler and moister weather of northern New Mexico (Knight 1983). Though this species is not considered to be of special status in the state, it is noteworthy and is given special consideration in this document. This manzanita population has suffered a significant decline in recent years from the ongoing drought in New Mexico. To date, however, visitation to the Monument does not appear to be adversely affecting these plants.

Visual Resources

The Monument exhibits special tuff formations for which the area is named. Light-colored, cone-shaped tent rocks that were formed by erosion of layers of volcanic ash and stream-deposited gravel are related to volcanic activity that occurred in the Jemez Mountains 6 to 7 million years ago. Eventually this erosion cut away at the softer tuff and created tent shapes with a broad base tapering up to a point with a cap of resistant volcanic rock. “A variety of erosional landforms, besides the conical tent rocks themselves, are dramatically illustrated within the monument boundaries. The inspiring photogenic landscape of the Tent Rocks, proper, is a result of the interplay of faulting, volcanic activity, sediment deposition, groundwater movement, and erosion and serves as an integrating attribute of the geological story” (Gary A. Smith, UNM 2001).

Approximately 25 percent of the federal lands have slopes of less than 15 percent, while the majority of the lands contain steeper slopes that generally range from 15 to 55 percent, and a few acres have even steeper slopes. The cone formations are steep, with some as tall as 90 feet. Coloration is gray, white, and subtle pastel shades. Kasha-Katuwe means “white cliffs” in the traditional Keresan language of the Pueblo de Cochiti. The “tent rock” formations extend from the private lands into the federal lands along the cliff faces in Peralta Canyon (refer to Figure 3-2).

The lower portion of the Monument consists predominantly of rolling hills covered with piñon and juniper trees (refer to Figure 3-3). Peralta Canyon, an intermittent (occasional) drainage through the Monument, provides some visual variety when flowing. Draining into Peralta Canyon and the valley bottom are small canyons and other numerous drainages. One of these, a narrow canyon on federal land with a marked trail within it, provides an excellent opportunity for the public to view the special geologic scenery up close (refer to Figure 3-4).

From mesas within the northern portion of the Monument, visitors are offered views of the scenic landscape features existing on the surrounding nonfederal lands, especially those extending along the northern boundary of the Monument, and on the federal land within the Monument (refer to Figure 3-5). Visual contrasts exist between the lighter exposed soils on the mesa side-slopes and the darker woodland vegetation (refer to Figure 3-6). The previously dense woodland vegetation and the perceived smooth texture resulting from this density are now changing as a result of the recent drought and insect infestation that have killed high numbers of the piñon trees, resulting in less vegetative density in the Monument. Vegetative treatments being done to reduce the risk of wildfires are also reducing the tree density.

Through the *Rio Puerco Resource Management Plan*, the BLM assigned a Visual Resource Management (VRM) Class II to federal lands contained within the boundaries of the Tent Rocks Area of Critical Environmental Concern (ACEC), now the Kasha-Katuwe Tent Rocks National Monument. This classification applies to the 4,124 acres of existing federal lands within the boundary of the Monument. VRM Class II was assigned to these federal lands because of their scenic quality and the sensitivity of the area’s special geological features.

Since the federal lands in the Monument were assigned VRM Class II, limited management activities have taken place. The BLM has installed facilities to manage recreational use, provide resource protection and visitor convenience. The access road to and through the Monument has been undergoing a series of improvements, one of which was surfacing to reduce dust and improve the air quality and visibility in the immediate area. Recreation facilities (or the "built environment") located near the tent formations include parking areas, picnic tables with shelters, restrooms and signs. The selection and placement of colors and surface material have helped to blend the facilities into the landscape and reduce the contrasts with the basic elements of the natural features in the characteristic landscape (refer to Figures 3-7 and 3-8). Trails also have been provided for easier access to the scenic tent rock formations on federal land.

Another area undergoing development is near the northwest boundary where the BLM built a terraced scenic overlook platform in 2003 (refer to Figure 3-9). Also at this location are a defined parking area, pedestrian access from the parking area to the overlook, and landscaping. Yet to be built is a short loop trail along the edge of the mesa that would provide visitors with other viewing opportunities of the scenic landscape features contained within the Monument and on nonfederal land in the Planning Area. To help increase the public's awareness of the area's visual values, the agency also is planning interpretive signs

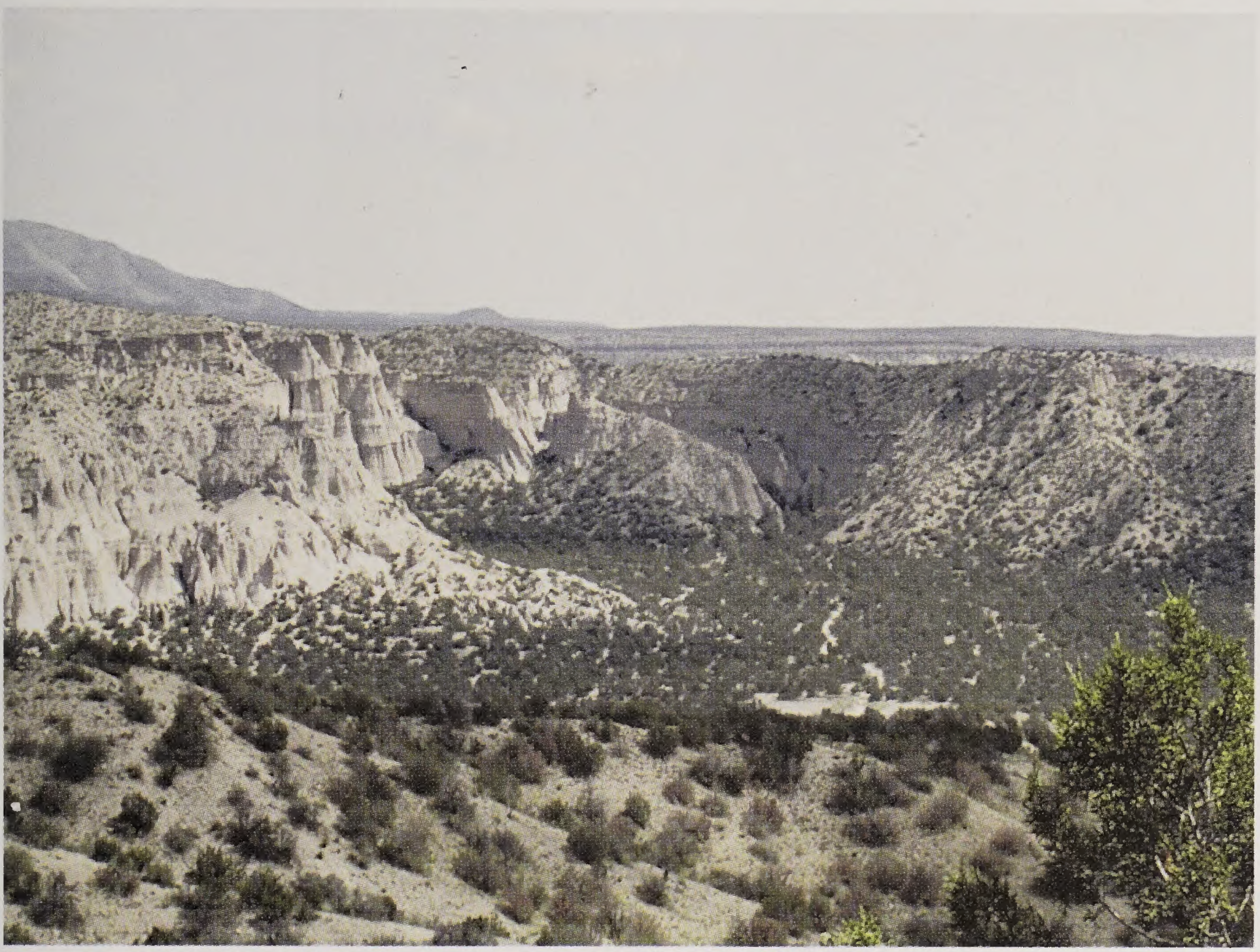

Figure 3-2. Tent rock formations extend along cliff faces in Peralta Canyon.

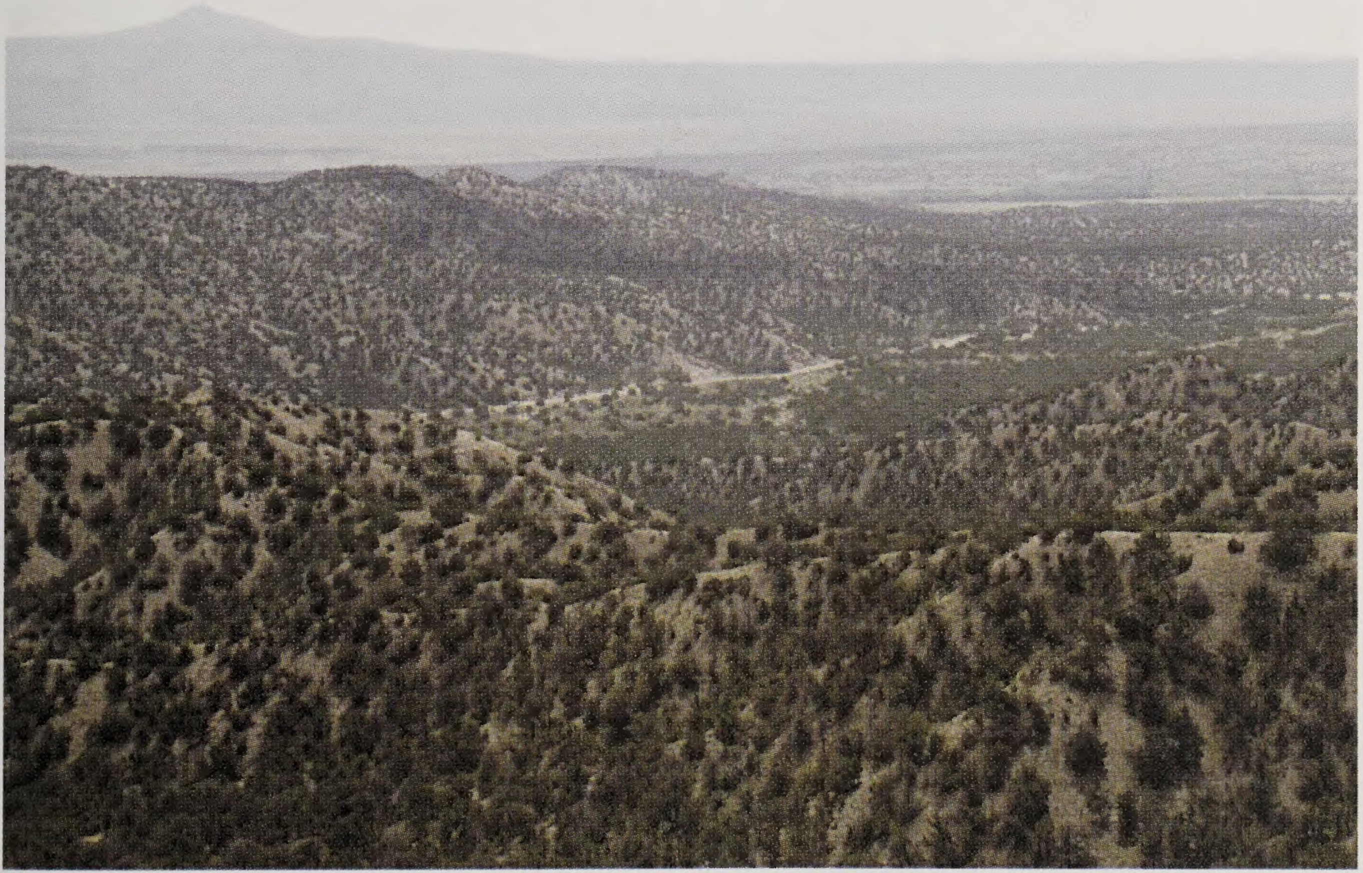

Figure 3-3. The lower portion of the Monument consists primarily of rolling hills with piñon and juniper trees.

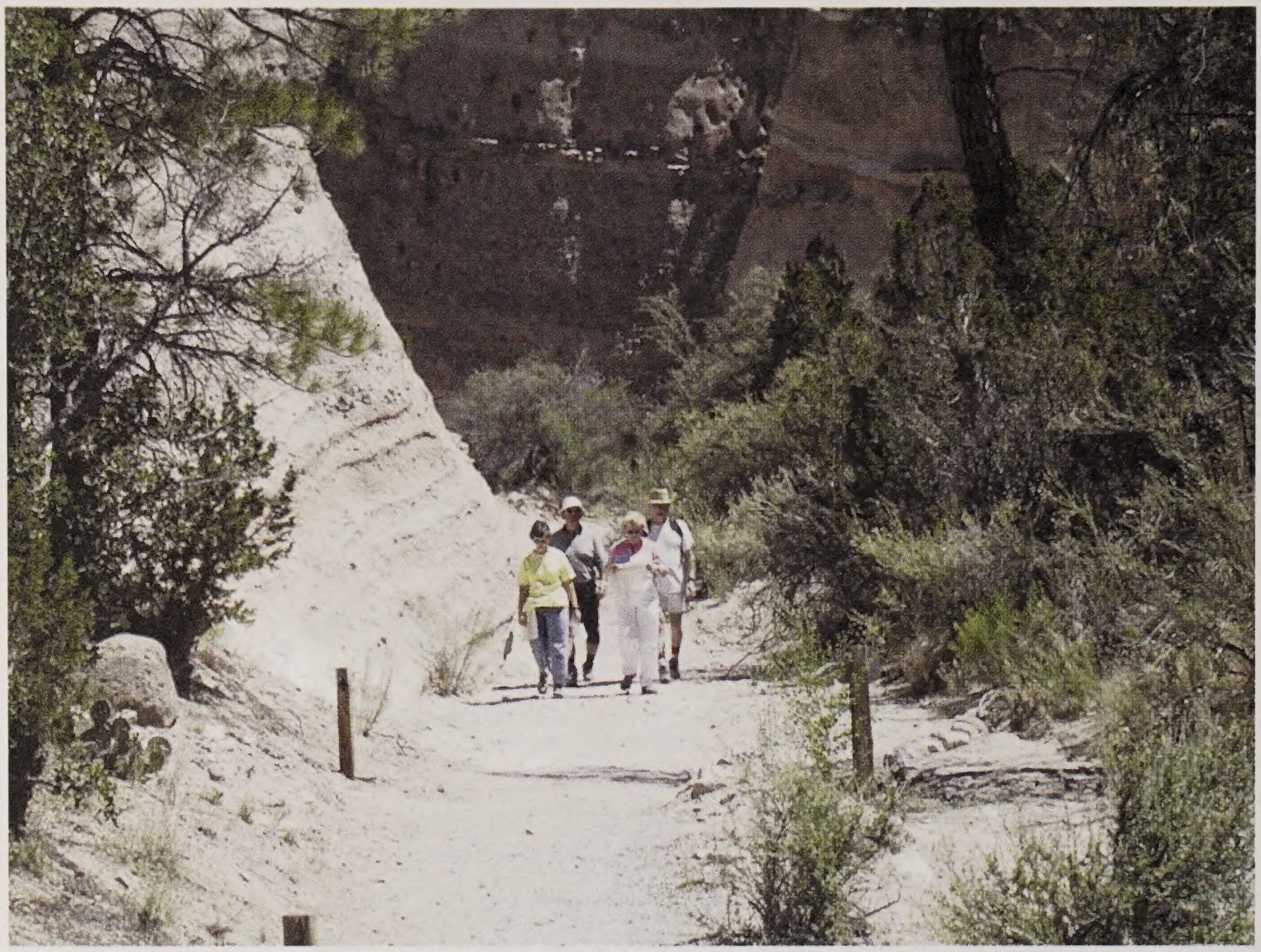

Figure 3-4. Visitors on a narrow canyon trail have opportunities to view the Tent Rocks up close.

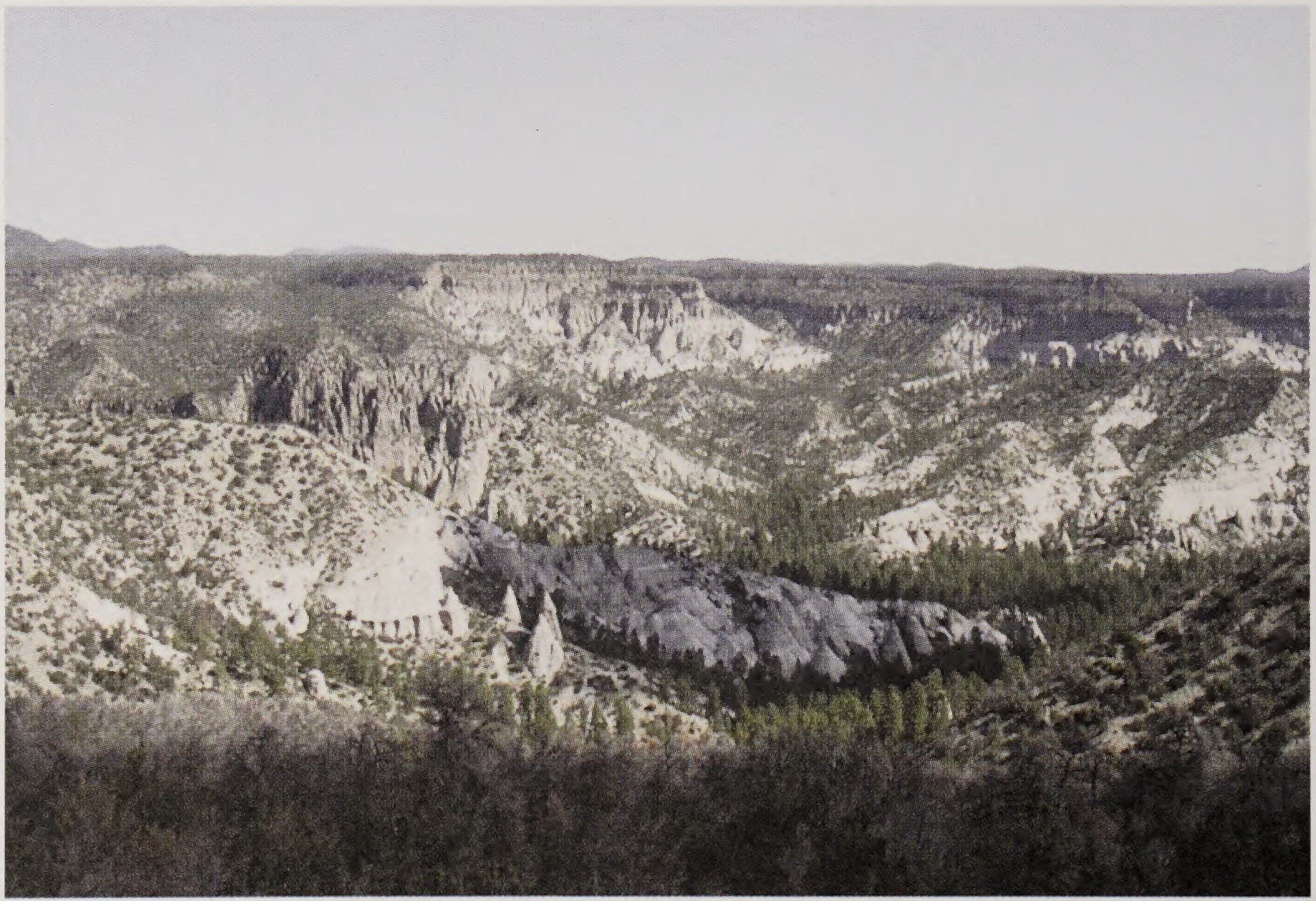

Figure 3-5. Visitors to the northern portion of the area can view landscape scenery on nonfederal lands.

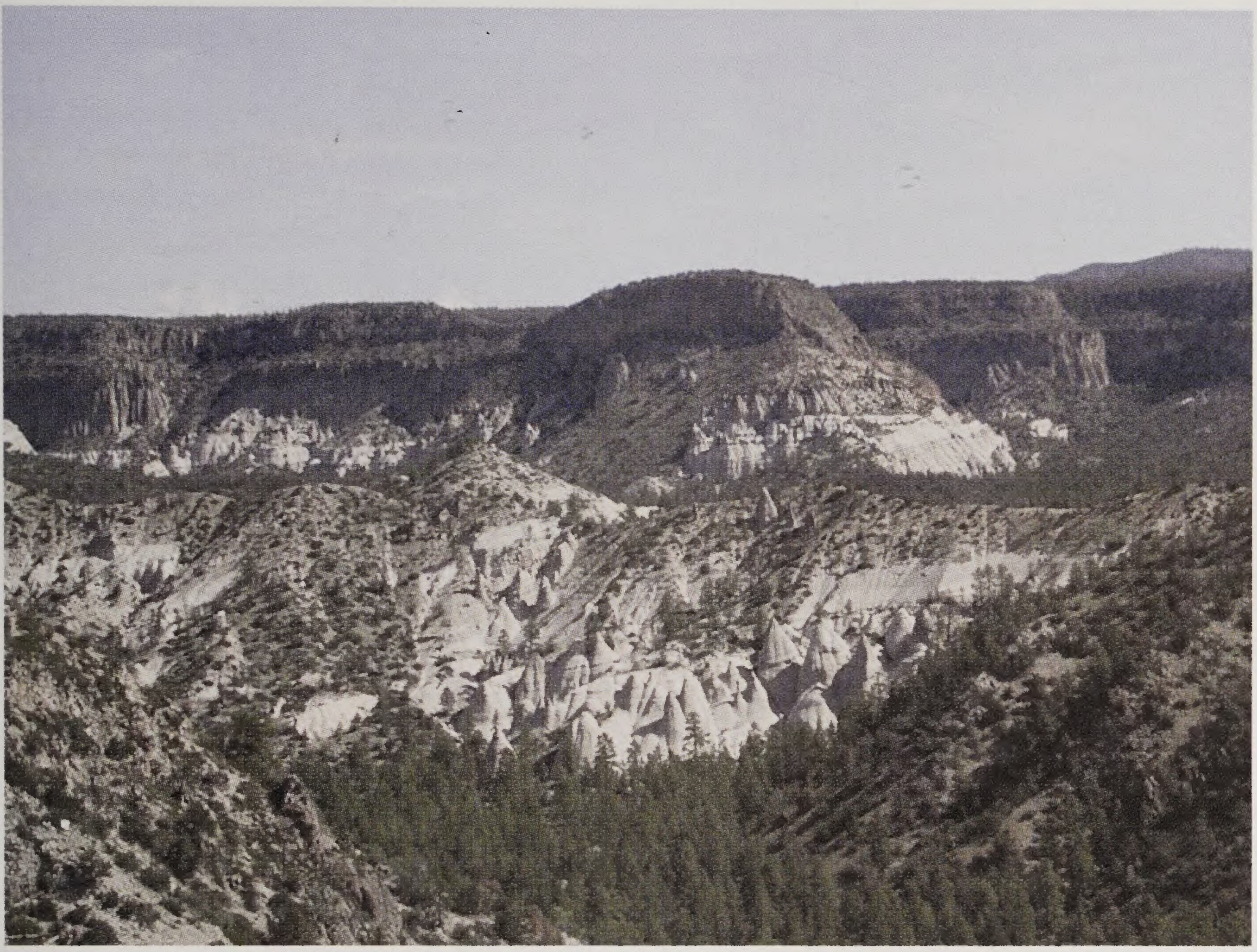

Figure 3-6. Darker woodland vegetation offers contrasts with lighter soils on mesa sideslopes.

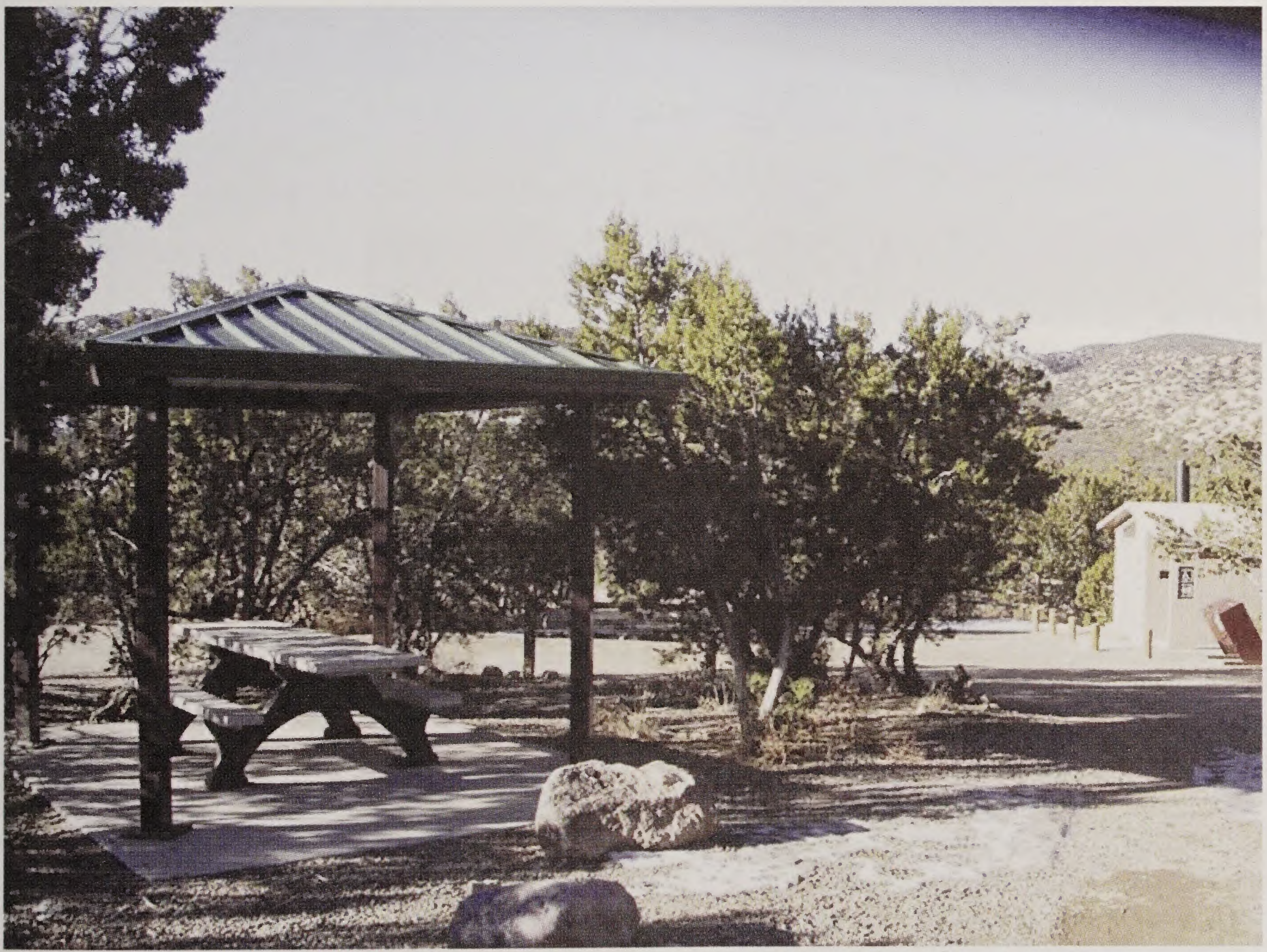

Figure 3-7. Visitor facilities near the tent formations blend in with the landscape.

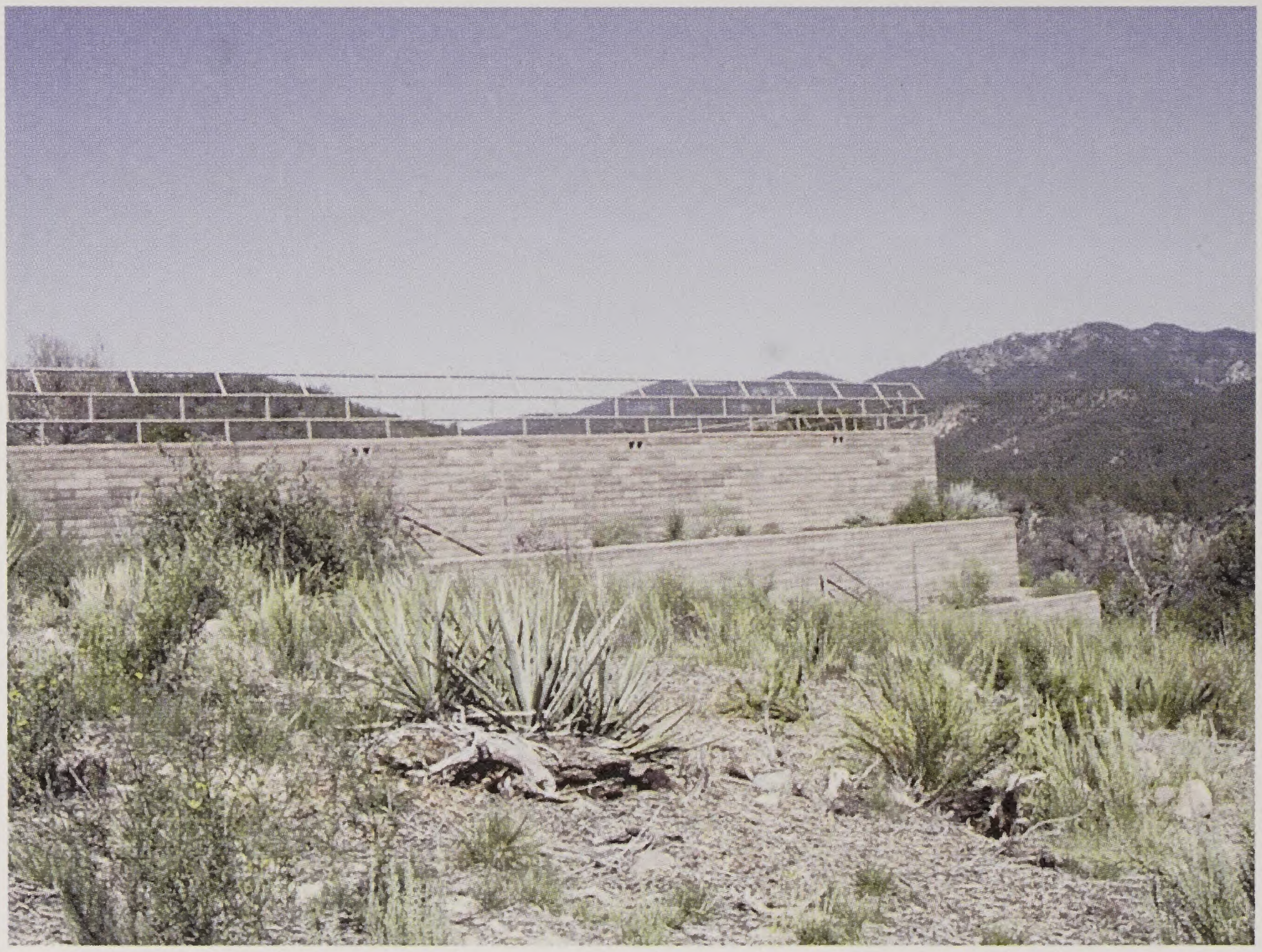

Figure 3-8. The selection and placement of colors and surface material in visitor facilities reduce contrasts with the landscape.

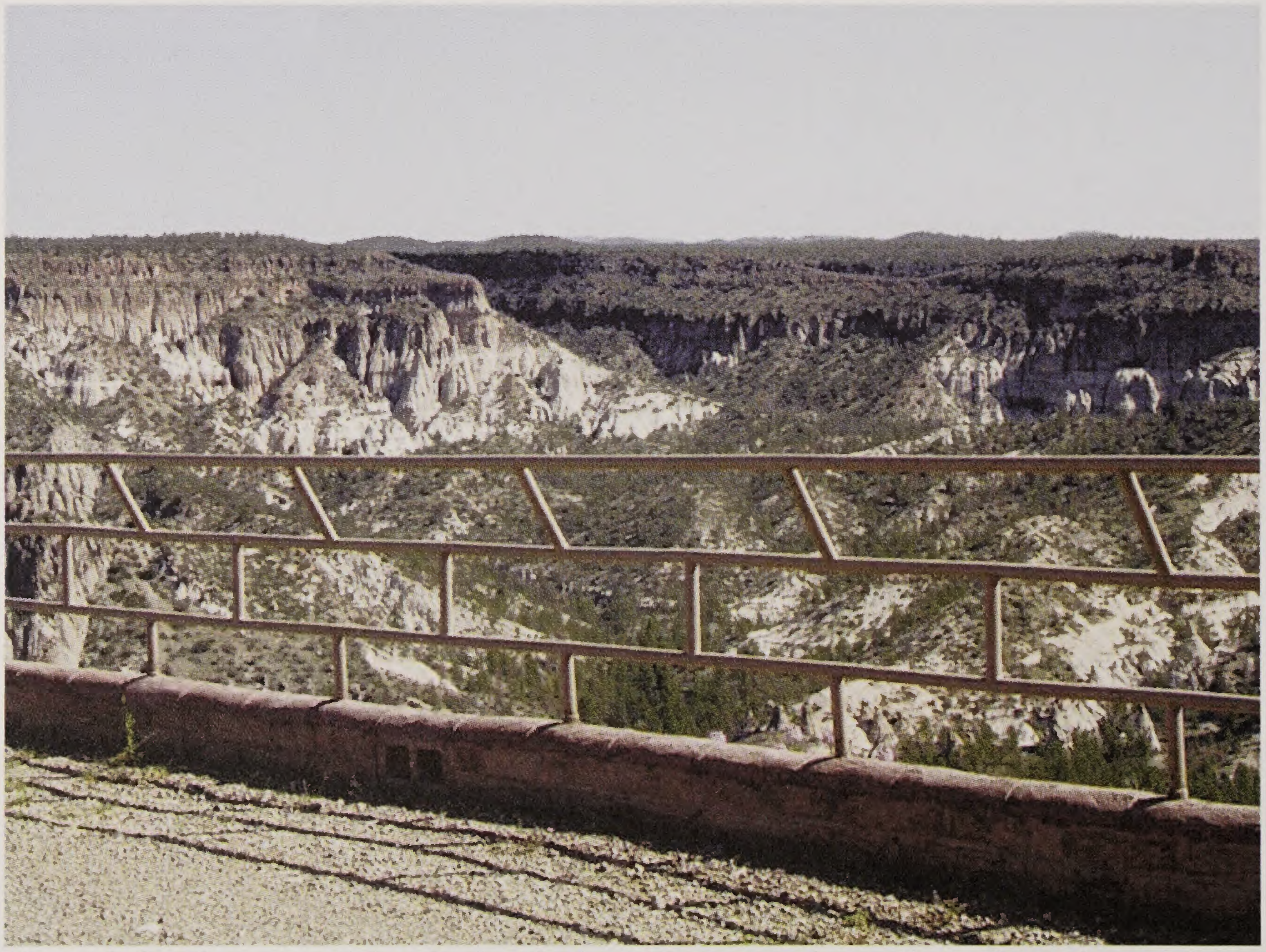

Figure 3-9. The terraced Scenic Overlook platform near the northwest boundary of the Monument offers viewing opportunities to visitors.

Water Resources

The presence of surface and groundwater in an area depends on the local and regional climate (discussed below) and landforms. In the Monument, the landforms consist of hill slopes and ridgetops, rolling plateaus, alluvial fans, and stream channels and their flood-prone areas.

Climate

Records at nearby Cochiti Dam indicate an average annual precipitation of 12.1 inches. For the years 1975 through 2004, the average monthly and annual precipitation amounts at the dam are as shown in Table 3-12 (Western Regional Climate Center 2004).

In the winter and spring months, precipitation may fall as either rain or snow. Most annual moisture comes from thunderstorms during July through September.

Surface Water

No perennial streams, springs, or seeps lie within monument boundaries. Surface water flows may occur at various times of year from thunderstorms, frontal system rainfall, and melting snow.

Few water resources have been developed on federal land within the Monument. Two small dirt tanks, a water collector and tank have been used for livestock and wildlife water.

Peralta Canyon is the principal stream channel within monument boundaries. Colle Canyon, a major tributary to Peralta Canyon, joins it near the northern boundary of the Monument. Both streams have their headwaters in the higher terrain of the Santa Fe National Forest to the north, and accumulate an annual snowpack there. Thus, Peralta Canyon within the Monument may experience sustained periods of snowmelt runoff from the higher terrain, though no streamflow records have been kept.

TABLE 3-12

AVERAGE PRECIPITATION AT COCHITI DAM,
1975-2004
(inches)

Time Period	Average Precipitation
January	0.61
February	0.45
March	0.68
April	0.75
May	1.00
June	0.93
July	1.64
August	2.02
September	1.38
October	1.15
November	0.87
December	0.61
Yearlong	12.10

Most of the Monument drains directly into Peralta Canyon from local watersheds of less than 2 square miles in size. Brief streamflows occur in the small watersheds after sufficiently large rainstorms or snowmelts. At the Monument's southern boundary, the total watershed area drained by Peralta Canyon measures 38.6 square miles (24,687 acres) in size.

Throughout the Monument, Peralta Canyon is designated by the Federal Emergency Management Agency as a "special flood hazard area inundated by 100-year flood," with "no base flood elevations determined." [This designation is shown on the agency's insurance rate maps (FEMA 1996).]

Groundwater

The occurrence and quality of groundwater aquifers in the vicinity of the Monument are not well understood. Potentially, two types of groundwater recharge areas exist: (1) areas where streamflows seep into channels, and (2) areas with greater precipitation amounts (i.e., in the higher elevations to the north and west).

The BLM has recently investigated using groundwater for a drinkable water supply in the Monument. In 2003, a drilling attempt near the lower trailhead was unsuccessful in finding water to a depth of 525 feet, where drilling was suspended. Three other known wells within a mile of this location showed variability in groundwater depth and quality (USDI, BLM 2001).

Water Quality

The quality of the surface water in the Monument has not been characterized because of its intermittent (occasional) or ephemeral (temporary) nature. The Monument (including Peralta Canyon) is within the Rio Grande-Santa Fe Watershed (HUC 13020201) of the U.S. Geological Survey's eight-digit Hydrologic Unit Code watershed classification system. The state has identified no water quality problems for either the Monument or Peralta Canyon in the *2004-2006 Integrated Clean Water Act 303(d) 305(b) Report* (New Mexico Environment Department 2004).

The BLM protects water quality by following Best Management Practices (BMPs). (Refer to Chapter 2, "Soil and Water Resources," in the section entitled, "Management Guidance Common to All Alternatives" for a definition of BMPs for water resources management.) These practices are used when carrying out projects on public (federal) land to help ensure that water quality is maintained, and not degraded by events such as erosion that add sediment to the water. Activities in the Monument that have been carried out using these practices include the restoration of small areas (e.g., unused/unneeded roadbeds), addition of infrastructure (e.g., road widening; parking lots, trails, and visitor facilities), and retrofitting of facilities (e.g., trail relocation—USDI, BLM 2003).

Wildlife

General

The Kasha-Katuwe Tent Rocks National Monument is located on the lower slopes of the Pajarito Plateau and the southeast edge of the Southern Rocky Mountains physiographic province. The Pajarito Plateau harbors a diversity of animal species and communities, reflecting the wide variety of available habitats. The interfingering of deep, steep-sided canyons with narrow mesas that descend the east slopes of the Jemez Mountains and an inversion of the normal distribution of vegetation communities along the canyon floors result in many transitional overlaps of plant and animal communities and increased biological diversity. This dominant feature of the Pajarito Plateau, in combination with a descent of almost 1 mile in elevation from mountain ridges to the Rio Grande, has been the primary contributor to the richness and diverse ecological relationships of the species that characterize the plateau.

The Pajarito Plateau contains six vegetation zones, including montane grasslands, spruce-fir forest, mixed-conifer forest (with aspen forest), ponderosa pine forest, piñon-juniper woodland,

and juniper savanna. The montane grassland, spruce-fir, and mixed conifer vegetation zones are located primarily west of the Monument, with little representation inside it. These vegetation zones and their associated transition areas provide habitat, including breeding and foraging territory, and migration routes for a diversity of permanent and seasonal wildlife species.

The animals of the Monument have not been surveyed, but it is situated within 10 miles of Bandelier National Monument and Los Alamos County, which have been extensively surveyed and share the Monument's same ecosystems. Bandelier National Monument surveys indicate the presence of approximately 1,200 arthropod species, 5 amphibians, 14 reptiles, 44 terrestrial mammals and 12 bats. About 115 breeding bird species and 90 species of ants have been recorded in nearby Los Alamos County. No fish species are found within monument boundaries. However, 12 species of fish are found in the nearby Rio Grande, Cochiti Lake, and the Rito de los Frijoles. A native population of Rio Grande cutthroat trout is located in the headwaters of Peralta Canyon approximately 10 miles up stream from the Monument. The numbers of wildlife species found in the Monument are shown in Table 3-13 below

Habitat types within the boundaries of the Monument are somewhat limited because of the area's small size and location on the lower slopes of the Pajarito Plateau, as well as a lack of open water. Monument habitats are developed within vegetation communities that range from a oneseed juniper savanna at the bottom of Peralta Canyon to ponderosa pine-piñon-juniper woodland on the upper mesas, and a mountain mahogany-live oak shrubland on the canyon sideslopes.

However, the strong vertical arrangement of the area has lead to a variety of special habitats. These include canyon-effect ponderosa pine stringers, and cliff areas around the tent rock formations. The current drought and resultant beetle infestation have lead to a near total die-off of lower elevation ponderosa and piñon pine trees, altering the lower slope and canyon bottom habitat to a more open juniper-desert shrub savanna. This shift away from a young invasive woodland should change the associated wildlife species composition to include more desert grassland species, with a resultant increase in the area's biodiversity.

BLM wildlife management activities are currently directed by the *Final Protection Plan for Tent Rocks, an Area of Critical Environmental Concern* (1987). The Protection Plan's management goals and objectives (prescriptions) for wildlife are carried forward into this RMP, including protecting habitat for nongame birds, improving big game winter habitat, and providing water development. Actions already implemented that relate to these prescriptions include the construction of a large rainwater catchment, ripping of meadows to promote the growth of grass, and closing roads in Section 31, T. 17 N., R.4 E.

The BLM recognizes that the states are largely responsible for managing resident wildlife species, and the Department of Agriculture's Animal and Plant Health Inspection Service-Animal Damage Control (APHIS-ADC) has federal authority for carrying out animal damage management programs on public (federal) lands. APHIS-ADC cooperates with the BLM to identify areas where mitigation or restriction may be needed to comply with the BLM's land use plans. All special management areas within the Albuquerque District boundaries (including the Monument) have been identified to APHIS-ADC as restricted, and as public safety zones where predator management activities should not occur. (However, these activities may occur at landowners' request on the private and state inholdings within monument boundaries.)

Game Animals

The BLM supports management plans of the New Mexico Department of Game and Fish (NMDG&F) for those species that state law defines as of economic value (game animals). The Monument is on the boundary between Big Game (hunting) Units 6A and 6C. Big game species are an important aesthetic and economic resource in New Mexico. Big game species of interest in the area include mule deer, elk, black

TABLE 3-13

NUMBERS OF WILDLIFE SPECIES FOUND IN THE MONUMENT BY HABITAT TYPE

Category of Animal	No. of Species in Habitat Type	
	Woodlands & Savanna	Sideslopes & Cliffs
Amphibians	4	0
Reptiles	34	32
Big game (mammals & birds)	5	1
Smaller game birds	2	2
Raptors	9	9
Birds of conservation concern	17	17
Breeding birds	38	6
Neo-tropical migratory birds	57	57
Small mammals	66	66

bear, cougar, and turkey. The Monument is considered to be primarily wintering habitat for a portion of the Jemez elk and deer herds. Therefore the actual number of deer and elk occupying the area fluctuates widely during the year and with the severity of winter weather. The Monument is rapidly being surrounded by urban development, so its importance as an open area for big game winter habitat is growing. The current road density in the Monument is approximately .6 miles of road per square mile, which is near the optimal .5 miles per square mile for big game winter range.

Bighorn sheep occupied the White Rock Canyon portion of the Pajarito Plateau until the 1880s. This historical habitat occurs on land now part of Bandelier National Monument, Santa Fe National Forest, Los Alamos National Laboratory, San Ildefonso and Santa Clara Pueblos, and on private land. The NMDG&F estimates the area could potentially support approximately 125 bighorn, but currently has no scheduled plans for a reintroduction. Though habitat within the boundaries of the Monument is extremely marginal, bighorns reintroduced onto the Pajarito Plateau could potentially move there in the long-term future.

Mourning doves are the most common upland gamebird species in the area. They do not occur in high densities in the area and do not attract much hunter attention.

Waterfowl use of the area is severely limited by the ephemeral (temporary) nature of the streamflows in Peralta Canyon. These birds make only transient use of the area's few dirt dams when they contain water.

Nongame Animals

Other vertebrate species of high federal, state, or public interest include special-status species of amphibians, rodents, reptiles, raptors, and neotropical migratory birds (refer to the section above on Threatened, Endangered and Sensitive Species).

Reptiles and Amphibians

The area's lack of open water severely limits its habitat for amphibians, which require wetland sites for at least part of their life cycle. In the Monument, these sites are limited to ephemeral rainwater collection areas such as dirt tanks and depressions in rocks. The amphibian species known to occur in the vicinity of the Monument include the red spotted toad, New Mexico spadefoot toad, Woodhouse's toad, and tiger salamander. Little knowledge exists concerning most of these species in the Monument.

Reptiles generally prefer dense brush or rocky areas, which are found in abundance in the Monument. Small lizards are the wildlife most likely to be encountered by visitors to the Monument. Thirty two species of reptiles are found in the Monument's habitat types. Common reptiles that may be found in the area include eight species of lizard (collared, leopard, earless, roundtail horned, mountain short-horned, Eastern fence, side-blotched, and whiptail); and five species of snakes (coachwhip, garter, gopher, Western diamondback, and Western rattlesnake).

Raptors

The Peralta Canyon area contains an abundance of raptor habitat, ranging from valley bottoms to cliffs and woodlands. Rocky cliffs and ledges along the sides of Peralta and Colle Canyons provide nesting sites for raptors (birds of prey). The most common species in the area include the sharp-shinned hawk, Cooper's hawk, red-tailed hawk, kestrel, marsh hawk, and golden eagle. Ravens and jays are also common. Bald eagles are occasionally seen flying over Peralta Canyon because of its proximity to Cochiti Lake and the Rio Grande.

Small Mammals

The Monument provides habitat for 66 of the 85 species of mammals identified in Sandoval County. Rabbit species include the cottontail and black-tailed jackrabbit. Common rodents in the area include the Colorado chipmunk, least chipmunk, Gunnison's prairie dog, white-tailed antelope ground squirrel, rock squirrel, silky pocket mouse, Western harvest mouse, deer mouse, brush mouse, piñon mouse, rock mouse, white-footed deer mouse, Northern grasshopper mouse, white-throated woodrat, and porcupine. Carnivores include the long-tailed weasel, badger, bobcat, coyote, striped skunk, and gray fox.

Birds

A wide variety of bird species inhabits the Monument, as shown below in Table 3-14. Neo-tropical migratory birds comprise 57 of the 149 species of birds potentially occurring in the area. These birds are the subject of increasing scrutiny and concern because of their general decline over the entire country. On the Pajarito Plateau, 38 species of breeding birds occur in the dominant plant community, piñon-juniper woodlands. The ten species that breed exclusively in this habitat are listed in the table. Another six species breed exclusively in cliff areas, as listed below. Those neo-tropical species that are of special conservation concern are also listed in the table.

Invertebrates

The Planning Area has not been surveyed for invertebrate species, and records of these species in Sandoval County are sketchy. It is assumed that most of the nonaquatic arthropod species surveyed at Bandelier National Monument also occur in the Planning Area.

SOUTHWEST ACQUISITION

Introduction

The Southwest Acquisition was referred to in the Draft RMP/EIS as the "southwest edgeholding," a privately owned parcel adjoining the southwest portion of the Monument. This parcel has resource values similar to those of the Monument, and is desirable for management and use in conjunction with it. The BLM has now acquired the parcel, which will be managed with the Monument under land use decisions made as a part of this RMP. The Southwest Acquisition includes

TABLE 3-14

NEO-TROPICAL MIGRATORY BIRDS POTENTIALLY OCCURRING IN THE PLANNING AREA

Common Birds ash-throated flycatcher American robin black-headed grosbeak brown-headed cowbird Cassin's kingbird cliff swallow common raven house finch lesser goldfinch juniper titmouse spotted towhee violet-green swallow Western bluebird	**Birds Breeding Exclusively in Cliff Areas** canyon wren cliff swallow rock wren rufous-crowned sparrow turkey vulture white-throated swift
Birds Breeding Exclusively in Piñon-Juniper Woodlands Bewick's wren black-chinned hummingbird blue-gray gnatcatcher blue grosbeak bushtit Cassin's kingbird canyon towhee gray flycatcher piñon jay plain titmouse	**Neo-Tropical Birds of Special Conservation Concern** [a] Bendire's thrasher black swift black-throated gray warbler burrowing owl Crissal thrasher ferruginous hawk flammulated owl golden eagle Grace's warbler gray vireo Lewis' woodpecker Northern harrier piñon jay prairie falcon Swainson's hawk Virginia's warbler Williamson's sapsucker

Note: [a] Taken from the 2002 list, BCR 16 (Southern Rockies/ Colorado Plateau), *Federal Register* Vol. 68, No. 25; Thursday, February 6, 2003 (edited for birds occurring only in the piñon-juniper savanna ecotypes).

the south half of Section 31, T. 17 N., R. 5 E. and Section 6, T. 16 N., R. 5 E., a total of approximately 965 acres. The following paragraphs discuss the affected environment for this parcel, much of which is similar to that described for the Monument.

Access and Transportation

The primary vehicle access to the Southwest Acquisition is from the north by way of two-track BLM resource road 1011B, which branches off BLM Road 1011 near the northwest corner of the Monument. BLM's road 1011B ends at the north boundary of the Southwest Acquisition, but another two-track road (BLM resource road 1011C) continues from this point through the Southwest Acquisition to lands owned by the Santo Domingo Pueblo (refer to Map 6 in the map pocket). Before acquisition, public access to lands within this parcel was not available without permission from the landowner.

The Southwest Acquisition recently has been used for a variety of purposes, and many less-developed, unmapped two-track access routes developed by vehicle use can be seen throughout the area. The opportunity exists to limit vehicle access within the Southwest Acquisition by designating certain roads for such use, while closing other two-track routes. Some routes would be allowed to rehabilitate naturally, while others could be reclaimed under active projects.

From the south, vehicular access is only available by a two-track road through Pueblo of Santo Domingo land. The Southwest Acquisition could be made less vulnerable to unauthorized use by closing this road at the south boundary and fencing the area for resource protection.

Non-motorized access to the Southwest Acquisition exists by hiking or riding horseback cross-country, or by using Trail L3 in the southwest corner of the Monument where it adjoins the Southwest Acquisition. Existing trails in the Monument could be extended into the Southwest Acquisition to increase the hiking and equestrian opportunities by converting two-track routes and developing new trails.

American Indian Uses and Traditional Cultural Practices

Statements about American Indian uses and traditional cultural practices within the Monument also apply to the Southwest Acquisition. In accordance with the wishes of local American Indian groups, the BLM has not solicited specific information about these uses. Instead, the agency will continue to work closely with the pueblos, tribes, and nations mentioned above to resolve potential conflicts.

Cultural Resources

No cultural resources inventories have been conducted within the Southwest Acquisition, but resources in this parcel are expected to be similar to those in the mesa-top settings of the Monument itself. Scatters of chipped stone with occasional grinding stones, concentrations of burned rock, and buried hearths or fire pits dating to the Late Archaic Period (around A.D. 200) are likely to be relatively common. Informal reports have been made of at least one small masonry pueblo, probably dating between A.D. 1200 and 1540, and other remains from this period could be present.

The most intensive historic period use of the Southwest Acquisition was during the first half of the 20th century, when land parcels were patented to Hispanic homesteaders. Current information suggests that the principal historic period residence in this area was just outside the Southwest Acquisition, but related features such as a hand-dug well, facilities related to livestock operations, and possible Civilian Conservation Corps projects are present.

Geology, Minerals and Paleontology

The description of geology, minerals, and paleontology above generally applies to the Southwest Acquisition lands. However, no special geology is present on Southwest Acquisition lands as is found in the Monument. The acquisition consists of a series of minor floodplain areas that have been incised by ephemeral arroyos and streams; some people characterize the Southwest Acquisition as mesa-top country.

Composition consists predominantly of sedimentary fill and detrital pyroclastic material (refer to the Glossary) derived from erosion and transportation of material from nearby formations. Included is Quaternary alluvium, which contains poorly sorted sand and gravel, and eolian fine sand and silt. Locally, colluvium can be found as talus deposits. Also present from the Santa Fe Group are cobble-to-boulder-size gravels of andesite or rhyolite. Finally, poorly sorted volcanic sands and gravels can be found.

Minerals of interest here are pumice and obsidian. Small pumice deposits are present in the NW¼NW¼, SW¼NW¼, and SW¼SW¼ of Section 6, T. 16 N., R. 5 E. A field examination indicates these are alluvial in nature and have not been mined. The potential for pumice development here is low; the mineral would not be economic to mine primarily as the result of access limitations. Also present are scatters of obsidian (Apache tears), which weathered out of volcanic tuff and were transported away from their source. As an industrial mineral, obsidian is used in making rock wool, but in the Southwest Acquisition is widely scattered and of such small size as to have no economic potential. At present no valid mining claims exist on the 965 acres. However, all minerals are proposed to be withdrawn from entry on the acquisition in keeping with protection requirements of Proclamation 7394.

To date, no vertebrate or invertebrate fossils are known to exist on the acquisition. Should any be found they would be managed as outlined above in this chapter.

Lands and Realty

One improvement on the Southwest Acquisition is a perimeter fence that is down or in poor condition. Water developments include dirt tanks in Section 6, T. 16 N., R. 5 E., a seep in Section 31 developed with a collection pipe, and a shallow well near the old homestead site in Section 6. The dirt tanks have little remaining water storage capacity because they have filled with silt.

Livestock Grazing

Livestock grazing has occurred on this area of land for many decades; the original grazing application dates back to April 30, 1936. Owned by the estate of Leo Rael, these lands were part of a larger grazing operation that included some 4,459 acres of public land. The grazing permit for the La Jara Allotment was for 45 head yearlong on 76 percent public land.

On November 1, 2000, however, a settlement agreement (Public Law 106-425) was entered into by the Departments of Justice, Interior, and Agriculture with the Pueblo of Santo Domingo. The agreement placed the allotment lands (approximately 4,500 acres of federal land) in trust for the benefit of the Santo Domingo Tribe. The grazing permit controlled by the Rael estate therefore was terminated on February 28, 2001.

Improvements include two dirt tanks and fencing. The opportunity exists to manage grazing on the Southwest Acquisition similar to that on the Monument, as temporary use only if it would further the resource values of the Monument.

Recreational Uses

The elevation of the Southwest Acquisition ranges from 5,800 feet to 6,620 feet above sea level. The topography consists of several small canyons that meander in an easterly and southerly direction from small isolated piñon-juniper mesa tops, providing opportunities for dispersed types of recreational activities. Predominant south-facing exposures provide all-season recreation and educational opportunities. The area has wide plant diversity, including ponderosa pine, piñon pine and juniper, Apache plume, sideoats grama, blue grama, and wavy-leaf oak.

Existing two-track roads offer equestrian and hiking opportunities. Additional equestrian and hiking trails could be combined into the existing monument trails system to provide a more diverse riding experience.

Several structure and rock dams have been documented along the west canyon area beginning in Section 31 and extending through Section 6 and the south boundary of the Southwest Acquisition. The dams may be associated with homestead activities and soil conservation projects. Opportunities exist for interpretation programs about geology, Civilian Conservation Corps projects, homesteads, and prehistoric Pueblo Indian life in the area.

Potential health and safety issues exist around an open, developed water well and a PVC-encased water seep. Both will require decommissioning and/or adequate barriers to prevent death or injury to humans and wildlife. Protective barriers could include fencing, locked entrance doors and hatches.

Riparian Areas

The canyon stream channels within the Southwest Acquisition do not currently support riparian vegetation because flow is intermittent (occasional). The area may also lack the subsurface water needed to support such vegetation.

The Southwest Acquisition contains two dirt tanks. The northernmost, located near the center of Section 6, is dry at present and appears to hold water only in response to heavy rainfall events. The southernmost dirt tank is located along the south-central section line. This structure appears to hold water for extended periods of time and may have the potential to develop riparian vegetation. It offers some habitat for the area's bird and other wildlife species. The upper end of the pond area is currently infested with exotic noxious thistles, which will have to be removed as soon as possible.

The southwest quarter of Section 31 contains a small seep that is entirely captured and contained within a large-diameter, vertical PVC pipe. The water contained within the pipe is wholly unavailable to wildlife and, in fact, presents a hazard to wildlife and children, as the pipe forms a pitfall trap. It may be possible to restore the seep to a free-flowing condition that could result in the development of riparian characteristics in the future.

Social and Economic Conditions

The social and economic conditions of the Southwest Acquisition are the same as those described above for the Planning Area.

Soil and Water Resources

The Southwest Acquisition lies within a single soil map unit, the Cochiti-Montecito association (SMU 104—described above in Table 3-9).

Two developed dirt tanks and a seep are known to exist on the acquisition. The dirt tanks in the south half of Section 6 are formed by earthen dams that are in good structural condition and hold water when runoff occurs. The seep is in a canyon bottom in the west part of Section 31, and a shallow 18-inch-diameter collection pipe has been installed to expose the shallow water table. The depth to water and variability of the water table is unknown.

Generally, the western half of Southwest Acquisition drains south through Santo Domingo Pueblo land directly to the Rio Grande, while the eastern half drains east into Peralta Canyon within the Monument.

Threatened, Endangered, and Sensitive Wildlife Species

The Southwest Acquisition is integral to the Monument and is included in the Special Management Area addressed in the *Final Protection Plan for Tent Rocks, an Area of Critical Environmental Concern* (USDI, BLM 1987). The acquisition increases the size of the protected area by approximately 965 acres, which are virtually identical to adjacent areas within the Monument. The acquisition was surveyed by BLM biologists for special habitats for any listed threatened, endangered, or candidate wildlife species possibly occurring in Sandoval County, New Mexico. No such habitats were found. Therefore, the above discussion of such species also applies to the acquisition.

Vegetation

The description given above for vegetation in the Planning Area also applies to the Southwest Acquisition. The opportunity exists for additional vegetative treatments to be done on the acquired land to improve ecological condition.

Visual Resources

Located along the western and southwestern boundaries of the Monument, the Southwest Acquisition is characterized by similar landscape features found in the south portion of the Monument. Visual or scenic values are based on factors such as landform, vegetation, color, scarcity, and modifications.

The Southwest Acquisition is characterized by rolling/mesa landforms covered with dense woodland vegetation and small canyons. These lands do not display a diversity of interesting landforms and vegetative features. Only subtle color variation is displayed, with textural changes from the vegetation (predominantly juniper with intermingled piñon and small stands of ponderosa pine). Grasslands that had provided some openings in the vegetative cover are now being encroached upon by the trees.

The area generally appears to be natural, with minimal modifications as a result of past use of the land and structures placed there. These past modification have not introduced any discordant elements or added any enhanced visual variety to the area.

This parcel of formerly private land was located between public federal lands classified through the *Rio Puerco Resource Management Plan* as Visual Resource Management (VRM) Classes II and IV. Class II lands, including the federal lands within the Monument, are sensitive to changes in scenery and have a higher scenic value. Class IV lands are the least desirable for retention of scenic values within the BLM's VRM Class system. On VRM Class IV lands, management activities may dominate the view and be a major focus of the viewer's attention. The federal lands that had been assigned VRM Class IV through the Rio Puerco RMP have since been transferred to the Santo Domingo Pueblo to help resolve the Santo Domingo Land Claims Global Settlement.

Wildlife

Habitats in the Southwest Acquisition are an extension of those found in the Monument to the north and east. The majority of the acquisition is contained within the ponderosa pine-piñon-juniper woodland community on the upper mesa and western canyons. A oneseed juniper community is invading former meadow and savanna areas in the central and eastern portions of the acquisition. The majority of the ponderosa and piñon pine trees on acquisition land have been killed by *Ips* beetle infestation made worse by the extended drought, as is the case on the Monument.

Wildlife drinking water is limited to the dirt tank at the lower border of Section 6, and a developed seep in the southwest quarter of Section 31. The water from the developed seep is contained within a vertical PVC pipe and is unavailable to wildlife. The PVC pipe forms a pit trap that is a wildlife hazard.

BLM wildlife management activities in the area are currently directed by the *Final Protection Plan for Tent Rocks, an Area of Critical Environmental Concern* (1987). The Protection Plan's management goals and objectives (prescriptions) for wildlife are carried forward into this RMP, including protecting habitat for non-game birds, improving big game winter habitat, and providing water developments. Actions already implemented that relate to these prescriptions include the construction of a large rainwater catchment, ripping of meadows and removal of invading juniper to promote the growth of grass, and closing roads in Section 31, T. 17 N., R. 5 E. The above discussion of wildlife species for the Monument also applies to the acquisition.

Chapter 4

CHAPTER 4

ENVIRONMENTAL IMPACTS

INTRODUCTION

This chapter presents the environmental impacts or consequences of the management actions proposed under the three alternatives described in Chapter 2. These actions are being proposed as alternative ways of resolving the issues that pertain to allocation of BLM federal land resources, their use and protection in the Planning Area. BLM decisions about resource use and management in the Planning Area will be based on this impact analysis.

The alternatives include Alternative A (No Action), which represents the continuation of existing management practices defined in the *Rio Puerco Resource Management Plan* (RMP), and the *Final Protection Plan for Tent Rocks, an Area of Critical Environmental Concern*, with minimal modifications to meet the requirements of Presidential Proclamation 7394. Alternative B is the Proposed Action Alternative, which includes the agency-recommended management and continues most existing management while emphasizing values identified in the proclamation. Alternative C emphasizes an adaptive management approach that requires monitoring and provides for management changes keyed to the monitoring results.

The resources and uses listed in Table 4-1 have been considered under each alternative. (These include the “Critical Elements of the Human Environment” listed in the BLM’s *National Environmental Policy Handbook*, H-1790-1.) Only those resources or uses considered to have measurable levels of impacts are further discussed in this chapter. Those in the right-hand column of Table 4-1 have been determined to have no impacts, the impacts on them would be negligible, or the elements are not present in the Monument and Southwest Acquisition.

For the analysis, BLM staff members have used existing data, current methodologies, professional judgment, and projected actions and levels of use. The analysis takes into account the mitigation measures and stipulations described in Chapter 2.

Direct and indirect impacts are analyzed, as well as short-term uses versus long-term productivity, and irreversible and irretrievable commitments of resources. Cumulative impacts are summarized at the end of the impact discussion for each alternative. These impacts would occur as the result of past, present, and reasonably foreseeable future actions by federal, state, and local governments, private individuals, and entities in or near the Planning Area.

The following resource/use impact discussions are organized alphabetically under each alternative. Under the main heading for each use or resource, the headings for other resources/uses causing impacts on the main resource/use are listed. (Note: Where impacts to uses or resources in the larger Planning Area can be estimated, they are also discussed. However, BLM survey and knowledge of the nonfederal land is less extensive because of limited access.)

Impacts from actions to be carried out under more than one alternative are discussed under the first applicable alternative. This discussion then is referenced under the other pertinent alternative(s). Where pertinent, the discussions address the five planning issues that were introduced in Chapter 1 as “areas of concern” for the Kasha-Katuwe Tent Rocks National Monument. These are land tenure adjustment, access and transportation, recreational activities, ecosystem restoration, and American Indian uses and traditional cultural practices.

The emphasis of this chapter is to identify the environmental impacts likely to be created if the decisions proposed under the given alternative were implemented. This informs the managers

TABLE 4-1

RESOURCES AND USES POTENTIALLY IMPACTED BY THE PROPOSED ACTION AND ALTERNATIVES

Resources & Uses Likely to Be Impacted	Resources & Uses Not Present or Not Likely to Be Impacted
Access & Transportation	Air Quality
American Indian Uses & Traditional Cultural Practices	Areas of Critical Environmental Concern
Cultural Resources	Environmental Justice
Fire Management	Floodplains and Wetland Zones
Lands & Realty (Land Tenure Adjustment)	Hazardous or Solid Wastes
Livestock Grazing	Minerals
Noxious Weeds	Paleontology
Recreational Uses	Prime or Unique Farmlands
Riparian Areas	Soils
Sensitive Wildlife Species	Threatened & Endangered Wildlife Species
Social & Economic Conditions	Threatened, Endangered, & Special-Status Plants
Special Geologic Features	Water Resources
Vegetation & Woodland Management	Wild & Scenic Rivers (WSR) [a]
Visual Resources	Wilderness & Wilderness Study Areas
Wildlife Habitat	

Note: [a] Refer to Appendix I for the WSR evaluation of the Monument and Southwest Acquisition.

and the public of the probable consequences of the decisions being considered.

GENERAL ASSUMPTIONS

The following are the general assumptions used for impact assessment under all alternatives. Those associated with a single issue are included within the alternative discussion for that issue.

- Short-term impacts are those that would last for fewer than 4 years.
- Long-term impacts are those that would last for 4 years or more.
- Demand for recreation in the Planning Area will continue and increase.
- BLM Road 1011 through the Monument and Southwest Acquisition will remain open for access during established daylight hours.
- Staff and budget will be available to implement the actions proposed in this plan.
- The life of this plan is 15 to 20 years.

ALTERNATIVE A

Access & Transportation

Roads would continue to be maintained by Sandoval County or the BLM, with minimal improvements to monument roads and trails, except that BLM Road 1011 would be paved if funding became available. Other roads and trails including existing primitive roads would remain open and continue to be minimally maintained.

Motorized vehicle access throughout most of the Monument and Southwest Acquisition on primitive roads would continue to be permitted.

Increased public access would result in trespass on nonfederal lands and roads created by unauthorized users on public lands. Access to remote areas could increase the possibility of public safety issues, especially in areas that were not easily accessible to emergency and rescue equipment.

The roads would provide motorized access to 4,057 acres within the Monument and Southwest Acquisition, based on ROS categories. The semi-primitive, non-motorized category would include 1,032 acres, the balance of the federal lands within the Monument and Southwest Acquisition.

Approximately 24.2 miles of roads would remain open for public use and about 1.05 miles would be open for limited use only. Approximately 8.03 miles of foot trails would remain open and about 0.4 miles would be closed.

Impacts from American Indian Uses & Traditional Cultural Practices

Over half the road miles are in portions of the Planning Area for which high traditional use values exist. Infrequent short-term closures (usually lasting a few hours) could be requested on these roads and trails. (Note: These closures would be announced on the BLM website, the customer service telephone line and local radio stations, and on signs posted outside the gate at the monument entrance on Tribal Road 92. Visitors would be encouraged to go to nearby Cochiti Lake or the Cochiti Golf Course and Clubhouse until BLM Road 1011 was reopened.) The impacts of these closures on access by the general public would be negligible.

Under Alternative A, the usual BLM consultation procedures would be followed, so affected tribes or pueblos would be consulted regarding their concerns on proposed access and transportation activities. Consultation would be consistent under any alternative selected, and would take place at the time of plan implementation. It would be conducted according to the BLM's American Indian consultation requirements and the Cooperative Management Agreement with the Pueblo de Cochiti.

Impacts from Lands & Realty (Land Tenure Adjustment)

Under Alternative A an easement would be sought for 1.05 miles of road on privately owned inholdings within the monument boundary. This road easement would provide federal control of legal access for the main road through the Monument.

Impacts from Recreational Uses

Alternative A would provide for continued intensive recreational use associated with existing roads and trails. As the result of the recreational traffic volumes into the Planning Area, improvement and maintenance of the 5.9 miles of BLM Road 1011 would be needed.

Impacts from Visual Resources

Alternative A would provide for continued use of the Planning Area for extensive visual resource viewing on and near existing roads and trails. Roads would not be closed nor public access impaired to protect visual resources.

Impacts from Wildlife Habitat

The miles of roads and trails would continue to fragment wildlife habitat, but habitat management would not impact access and transportation except in the form of traffic controls such as speed limits.

American Indian Uses & Traditional Cultural Practices

The principal impacts to this element under Alternative A would be the loss of privacy and intrusion resulting from increasing recreational visitation. Under this alternative the Monument could receive as many as 150,000 visits per year by the 20-year end of the life of this plan. Under Alternative A, the BLM would not take action to limit or restrict use or control visitor numbers.

Impacts from Access & Transportation

Access and transportation decisions would contribute to the loss of privacy and create intrusions into traditional uses by making areas more or less available for recreation or other uses.

The figures in Table 4-2 identify factors affecting traditional use under each alternative. The higher numbers indicate greater probabilities for loss of privacy and intrusion except for "closed" roads and trails and non-motorized acres.

TABLE 4-2

IMPACTS TO AMERICAN INDIAN USES & TRADITIONAL CULTURAL PRACTICES UNDER THE ALTERNATIVES

Impacting Factor	Alt. A	Alt. B	Alt. C
Visitor use (average visits per year, maximum)	150,000	50,000	50,000
Intensive recreational use (acres)	155	241	280
Roaded Natural areas (acres)	1,987	1,987	2,895
Semi-Primitive Motorized areas (acres)	2,070	2,048	1,415
Semi-Primitive Non-Motorized areas (acres)	1,032	1,054	779
Roads designated as “Open” (miles)	24.20	5.95	9.10
Roads designated for “Limited Use” (miles)	1.05	7.80	5.75
Roads “Closed” (miles)	0.00	11.50	10.40
Trails designated as “Open” (miles)	8.03	7.23	8.93
Trails designated as “Closed” (miles)	.40	1.90	0.40

Impacts from Cultural Resources, Fire Management, Special Geologic Features, and Vegetation & Woodland Management

Privacy for traditional uses would also be impacted by management of these uses and resources. Under Alternative A, these impacts would be negligible. The BLM would follow the same general consultation practices with tribes and pueblos under all alternatives. However, there would be a greater possibility of archeological research involving excavation or collection of artifacts under Alternative A, so more incidents of consultation could occur.

Impacts from Lands & Realty (Land Tenure Adjustment)

Land tenure adjustments would likely reduce privacy and increase intrusions for those engaged in traditional uses of the Planning Area. The amount of those impacts would depend on the uses permitted on nonfederal land, whether inholdings or edgeholdings. These uses can only be recommended in this plan, as the non-federal landowners would retain control of their land.

Cultural Resources

Impacts from Access & Transportation

Under Alternative A, 24.2 miles of roads would remain open and 1.05 miles would be limited to authorized or emergency use only. A total of 5.3 miles have been inventoried, with actions taken to protect two archeological sites that were adversely impacted by road maintenance along this segment. Under standard procedures, the BLM would not inventory the remaining 18.9 miles of roads, so any sites located along those routes could be affected by future maintenance.

About 8.03 miles of existing trails would remain open, of which 1.81 miles have been inventoried for cultural resources. The most serious potential effects of the trail system would be the indirect impacts discussed under "Impacts from Recreational Uses" below.

Impacts from Fire Management, and Vegetation & Woodland Management

The BLM's Cultural Resources Protocol Agreement with the New Mexico State Historic Preservation Officer recognizes that less than Class III inventory coverage may be appropriate for some low-impact fire or fuels treatments. Based on the expected nature and density of cultural resources and on the kinds of effects anticipated, the BLM makes case-by-case judgments for these projects. Usually prescribed fires and fuel treatment projects that involve light off-road vehicle use or dragging of slash are subject to reconnaissance/sample surveys covering between 7 and 20 percent of the project area. Although these practices are reasonable, cultural resources still could be damaged by the effects of fire or other forms of disturbance related to vegetation and woodland management.

Impacts from Lands & Realty (Land Tenure Adjustment)

Cooperative Management Agreements for 1,278 acres of nonfederal surface within the Monument and Southwest Acquisition would take cultural resources into account, enhancing protection of those resources managed under the agreements. Acquisition and withdrawal of mineral rights would also help to protect cultural resources.

The 965-acre Southwest Acquisition brings additional sites under federal protection and management. Acquisition of 1.05 miles of primary road easement would not have direct effects on cultural resources, but use and maintenance of transportation routes within this easement would have some impacts. These impacts are discussed above under "Impacts from Access & Transportation."

Impacts from Noxious Weeds

In the unlikely event that weed control measures seemed to result in significant new surface disturbance, these activities would be subject to standard cultural resources inventory and mitigation procedures.

Impacts from Recreational Uses

The direct impacts of recreational uses are relatively easy to identify and mitigate. Under Alternative A, direct impacts to cultural resources would result from the use of 8.03 miles of open hiking trails, as well as continued maintenance and operation of the existing Scenic Overlook and trailhead/picnic area. Any new construction would be subject to the usual cultural resources inventory requirements, with identified conflicts being resolved by the use of procedures described in the Protocol Agreement (or successor agreements) with the New Mexico State Historic Preservation Officer.

The indirect impacts of recreational use are much more difficult to address and without question would be the single greatest factor affecting cultural resources over the life of this plan. Despite prohibitions and educational efforts, some members of the visiting public would collect attractive potsherds, projectile points, and other artifacts. Under Alternative A, visitation could exceed 150,000 per year by the end of the 20-year life of this plan. The impacts of illegal collection would be cumulative and irreversible, resulting over time in the loss of archeological and historical sites.

The BLM can partially mitigate these indirect impacts through inventorying and documenting surface artifacts, as well as collecting outstanding specimens. Under Alternative A, the BLM would assign no special priority to additional cultural resources inventory in the Monument. Instead, this area would be evaluated on an equal basis with other areas managed by the Rio Puerco Field Office, taking into consideration the nature and importance of cultural resources present, as well as the potential threat created by rising levels of visitation. However, the BLM would be more receptive to projects that involved excavation under this alternative, partially mitigating the effects of illegal artifact collection. Information lost in surface assemblages might be recovered through excavation.

Impacts from Special Geologic Features

These features would be visited for observation and study. Trails and other facilities to accommodate visitation have the potential to impact cultural resources. However, these impacts would be mitigated by avoidance, inventory and/or documentation of surface artifacts, and collection of outstanding specimens.

Fire Management/Ecosystem Restoration

Impacts from Access & Transportation

Transportation routes and visitor accessibility within the Monument would limit the BLM's ability to use fire management to increase vegetative diversity in some areas. This would also be true for acreages acquired or managed under Cooperative Management Agreements with nonfederal landowners.

Impacts from American Indian Uses & Traditional Cultural Practices

Mitigation measures required for protecting these uses and practices would require adjustments in treatment methods (e.g., fire versus mechanical, treatment combinations), location, and/or timing. Overall, these adjustments would result in fewer acres being treated.

Impacts from Cultural Resources

Mitigation measures required to protect cultural resources would require similar adjustments in treatment as those discussed above for American Indian uses and traditional cultural practices. These measures also would result in fewer acres being treated.

Impacts from Lands & Realty (Land Tenure Adjustment)

Cooperative Management Agreements (CMAs) and/or acquisition of nonfederal land in the Planning Area would make additional acreage available for vegetative treatments. Treatment of part of the acreages designated as Fire Regime Condition (FRC) Classes 2 and 3 would be limited because of difficult access (e.g., the presence of slopes with an angle greater than 15 percent). Some of these areas could become accessible through future technological advancements (e.g., improvements in the design and capabilities of mechanical equipment). (Refer to Table 2-4 in Chapter 2 for acreages in each FRC class, and to Table 2-7 and Map 9 for information on those areas accessible for treatment based on slope.)

Impacts from Livestock Grazing

Discontinuing livestock grazing on 4,088 acres would result in an increase of fine fuels (e.g., grasses) to carry ground fires. This would create conditions favorable to fires during cooler seasons rather than the hot summer months, thereby influencing the size, intensity and severity of fires on portions of the Planning Area. In the long term, ground fires could improve watershed conditions and winter habitat for big game.

Impacts from Recreational Uses

The BLM would not use fire as a management tool for ecosystem restoration in the 155-acre intensive recreation use area nor in the 86-acre Scenic Overlook area (refer to Map 3 in Chapter 1).

Impacts from Vegetation & Woodland Management

As the result of access and slope limitations, untreated woodland stands in FRC Classes 2 and 3 would continue to be overstocked (as measured in tree stems per acre), and plant communities would be of low vigor on 4,085 acres. Direct effects associated with overstocking and low vigor would include the death of larger piñon trees due to drought, insect infestation, and disease. Indirect effects would be an increase in the density of juniper trees, and a decrease of herbaceous plants in areas of tree encroachment (resulting from decreased water and nutrient availability, changes in soil chemistry, and loss of sunlight). Live tree diameters would decrease as large trees died and were replaced by seedlings and saplings.

However, thinning treatments would have direct beneficial impacts by improving tree vigor on 934 acres of public land (589 acres of FRC Class 2 and 345 acres of FRC Class 3) as the result of increased nutrient and water availability. (Note: These treatments would be applied under any chosen alternative; refer to "Continuing Management Guidance Common to all Alternatives" in Chapter 2.) Stands with minimal piñon tree stocking would benefit from juniper removal. Indirect effects would include the potential for rapid regeneration within areas where manual thinning was applied. (Note: Treated areas would require mechanical or fire maintenance 10 to 12 years after manual thinning.) In drier piñon sites on south-facing slopes, the bark beetle (*Ips pini*) could potentially breed in fresh slash created by manual thinning and attack adjacent live trees.

Lands & Realty (Land Tenure Adjustment)

The BLM recognizes that nonfederal landowners would continue to have valid existing rights on federal lands.

Impacts from Access & Transportation

A road easement across 1.05 miles of private land is needed to allow BLM to control access through the Monument on BLM Road 1011.

Management of the Monument would be more effectively handled if Cooperative Management Agreements could be negotiated with the owners of 1,278 acres of state and private inholdings in the Monument.

Livestock Grazing

Impacts from Lands & Realty (Land Tenure Adjustment)

Grazing would be discontinued on two allotments, involving permits authorizing grazing use of 303 Animal Unit Months on 4,088 federal acres. Discontinuing grazing would reduce the permittees' annual authorization by approximately 25 head of livestock.

Recreational Uses

Impacts from Access & Transportation

The 24.2 miles of existing roads and 8.03 miles of existing trails would provide ready public access to 241 acres considered to be intensive recreational use areas (refer to Map 3 in Chapter 1). A total of 4,057 acres would be accessible by motorized vehicles. As the result of this access, little of the Monument and Southwest Acquisition would provide an experience of solitude.

The 8.03 miles of trails would provide public access to 1,032 acres forming a dispersed use area beyond the intensive use area. This dispersed use area would more favorably serve the needs of those who enjoyed hiking, and would positively impact recreational use within the Monument by spreading it over a larger area.

Impacts from American Indian Uses & Traditional Cultural Practices

The Monument may be closed to visitors for approximately 3 days per year for periods of a few hours to all day. (Note: These closures would be announced on the BLM website, the customer service telephone line and local radio stations, and on signs posted outside the gate at the Monument entrance on Tribal Road 92. Visitors would be encouraged to go to nearby Cochiti Lake or the Cochiti Golf Course and Clubhouse until BLM Road 1011 was reopened.) Portions of the Monument would be closed to trail development or dispersed hiking to provide respect for traditional activities.

If temporary Planning Area closures were needed to allow privacy for traditional activities, the BLM would modify sections of the Cooperative Management Agreement with the pueblo. Revised sections could include those regarding visitor use, facility development, location and use of trails, and non-motorized recreational opportunities.

Impacts from Cultural Resources

Under Alternative A, visitation could exceed 150,000 visits per year. Improvement of existing trails would be subject to the usual cultural resources inventory requirements.

Impacts from Lands & Realty (Land Tenure Adjustment)

Trespass use would continue to occur on private inholdings. Signing, restrictions on recreational use, and patrol and enforcement would be required to avoid trespass within the Monument. This would increase the need to develop Cooperative Management Agreements with private landowners to reduce the level of trespass use.

Peralta Canyon stream 2005 spring runoff after an exceptionally wet winter.

Impacts from Riparian Areas

A total of 2.05 miles of Peralta Canyon stream channel lie within the Monument (refer to Map 12). All waterflows are intermittent (occasional) and the stream channel is considered to be "Arroyo Riparian." This area would benefit from little or no visitor use, so the 3-acre study area would be fenced to discourage visitors from entering it.

Impacts from Special Geologic Features

Within the 167 acres having special geologic features (refer to Map 5 in the map section), hiking would be restricted to existing trails to minimize damage to these features.

Impacts from Visual Resources

Class II VRM designation would place some limitations on the development of recreational facilities.

Impacts from Water Resources

By using water sources that met health and safety requirements, the BLM would make available sufficient drinking water to meet the needs of the visiting public.

Impacts from Wildlife Habitat

Maintenance of the best possible wildlife habitat would result in the following types of restrictions on visitor use.

- Limiting visitors to day use;
- Limiting vehicle speeds;
- Restricting pets to vehicles or leashes; and
- Limiting the off-road access west of the Scenic Overlook to non-motorized use only.

Social & Economic Conditions

Impacts from Livestock Grazing

Discontinuing livestock grazing on the BLM portion of two allotments would have social and economic impacts. The social impact would be minimal, because the permittees' ranching lifestyle would not be totally lost. The permittees would have the potential to own and graze some livestock on private, state, and Forest Service lands. Economically, the two permittees would lose the gross income from 25 head of cattle. Estimated roughly because of annual price variations, the total lost income for both permittees together would be about $10,650 per year (using 1999 to 2003 average calf prices and assuming a 500-pound calf and a 90-percent production rate).

Impacts from Recreational Uses

The recreational visitation to the Monument has increased from 8,600 in 1998 to 50,300 in 2004, an increase of 473 percent (an average of almost 68 percent per year). Under Alternative A, these numbers would continue to increase, but most likely at about 5 to 10 percent per year. This increase in visitation would decrease the quality of the monument experience for local users. It would also negatively impact the area's social value for the Cochiti people, particularly those who participated in traditional activities.

However, the increased recreational visitation would add to the BLM fees collected. This would increase the federal funding for monument facility maintenance, and continue to support three to four part-time jobs related to monument management for members of the Pueblo de Cochiti. Visits to the Monument are usually short (a few hours), and because of the Monument's location between Albuquerque and Santa Fe, the amount of tourist dollars that stay in the local economy would continue to be small.

Impacts from Special Geologic Features

Because the special geologic features are a major attraction, they contribute to the Monument's social and economic values. Visitation for observing the special geology would continue to be a social value that resulted in small amounts of service and products being purchased in the area, thus continuing to contribute small dollar amounts to the local economy.

Impacts from Visual Resources

The current Class II VRM designation would help retain the scenic values that contribute to the attractiveness of the Planning Area. Visitation and contribution of dollars into to the local economy would be sustained.

Soil & Water Resources

Impacts from Access & Transportation

The continued presence and use of roads would continue to have direct and indirect impacts on watershed stability and water quality. These impacts would include erosion from road surfaces and ditches, concentration of flows into channels, and transport and delivery of sediment in stream channels. Actual erosion and sedimentation amounts would depend on road construction standards and frequency of maintenance. Under Alternative A, continuing road maintenance and implementation of road upgrades would constitute Best Management Practices for the protection of water quality.

Impacts from Livestock Grazing

Discontinuing livestock grazing on 4,088 acres would improve watershed and stream channel conditions as the result of decreased grazing use of ground cover. The cumulative impacts of grazing removal, vegetation treatments, and timely road maintenance would improve watershed conditions in both the short and long term. Vegetation treatments carried out with equipment having wheels or tracks would cause short-term disturbance to the soil surface that would temporarily increase erosion and sedimentation.

Impacts from Recreational Uses

With visitation reaching or exceeding 150,000 people per year, the potential for vegetative trampling and the development of social trails would occur. These activities would result in increased erosion and delivery of sediment into local stream channels.

Impacts from Vegetation & Woodland Management

Vegetation treatments that resulted in a shift toward more herbaceous plant communities on treated sites would improve watershed stability.

Special Geologic Features

Impacts from Access & Transportation

Under Alternative A, the maximum miles of roads and trails would be open to the public (24.2 miles of road and 8.03 miles of trails). This would expose the special geologic features on 167 acres to the highest probability of short-term and long-term impacts in the form of erosion and other damage resulting from visitor use and accessibility. Signing and monitoring would help to prevent or decrease this type of impact.

If Cooperative Management Agreements (CMAs) could be developed with owners of nonfederal land to permit it, scientific study of special geologic features could be expanded on as much as 2,117 acres (462 acres of inholdings and 1,655 acres of edgeholdings). This could also expand the area of potential impact (refer to Map 5 in the map section).

Impacts from Cultural Resources

East of the main parking area is an area that contains special geologic features. Also present there are cultural resources, so any scientific group acquiring a permit to excavate them would be required to follow special stipulations to protect the special geologic features. Periodic guided tours for each resource would benefit user groups as well as protecting both resources.

Impacts from Fire Management

Prescribed fire would create a temporary, short-term visual impact for monument users viewing the special geologic features. These impacts would be the result of smoke and the areas blackened by fire.

Impacts from Lands & Realty (Land Tenure Adjustment)

Under any of the three alternatives analyzed in this plan, additional acreage with potential for geologic observation and study could become available through development of CMAs. In addition to the 167 acres of special geologic features already in federal ownership within the Monument, 462 acres could become available for study on the private inholdings and 1,655 acres could become available on the North Edgeholding, for a total of 2,284 acres. (Note: Under Alternatives B and C, the BLM is recommending acquisition of these lands if willing sellers are available.)

Impacts from Recreational Uses

Continual and increased visitation and recreation in the Monument would cause short- and long-term impacts to 167 acres containing special geologic features (on 439 acres, CMAs were developed for the private inholdings). Users who traveled off existing roads and trails would create new pathways that would become compacted over time and lead other users to special geologic areas. This would cause increased damage to and erosion of these features. Warning signs, close monitoring, and decreased visitor use would aid in mitigating this type of impact.

Future development of recreational facilities would create direct short- and long-term impacts to special geology unless the facilities were designed, located, and built to avoid damage and erosion near these features. Monitoring would be needed to ensure protection of geologic resources.

Impacts from Visual Resources

Continued management of the Monument under Class II VRM objectives would help to protect special geologic features from disturbance.

Impacts from Wildlife Habitat

Allowing hunting in the Monument and Southwest Acquisition would create direct short-term and possibly long-term impacts from hunters walking off road in areas with special geology. These impacts would be in the form of erosion and other damage to these features. The use of signs and a BLM presence would help to mitigate this type of impact. (Note: Hunter numbers and permit seasons are controlled by the New Mexico Department of Game and Fish.)

Threatened, Endangered & Sensitive Wildlife Species

Federally Listed Species

The BLM has determined that no habitat exists in the Monument and Southwest Acquisition to support any listed species. Based on this analysis, the activities proposed under any alternative in this plan would result in "No Affect" on all the listed, proposed, or candidate species identified by the U.S. Fish and Wildlife Service as potentially occurring in Sandoval County, New Mexico (refer to Table 4-3).

Sensitive Species

As shown in Table 3-11 in Chapter 3, thirteen sensitive wildlife species have been identified as

TABLE 4-3

DETERMINATIONS OF AFFECT UNDER THE ENDANGERED SPECIES ACT (ESA) FOR THREATENED, ENDANGERED, AND CANDIDATE WILDLIFE SPECIES IN SANDOVAL COUNTY, NEW MEXICO

Species	ESA Classification	Determination of Affect
Mammals black-footed ferret	Endangered	No Affect
Birds Southwestern willow flycatcher	Endangered	No Affect
bald eagle	Threatened	No Affect
Mexican spotted owl	Threatened	No Affect
yellow-billed cuckoo	Candidate	No Affect
Fish Rio Grande silvery minnow	Endangered	No Affect

potentially occurring or having suitable habitat within the Monument. Impacts to these species would be minimized by avoiding sensitive areas, timing construction activities outside of sensitive seasons, and conducting clearance surveys to avoid direct impacts. (Additional mitigating measures recommended below for impacts to wildlife habitat would also apply to sensitive species habitat.) These mitigation measures would be extended to all acquired lands within the Planning Area.

Mammals

Nine sensitive bat species have some potential to occur within the boundaries of the Monument and Southwest Acquisition. Potential impacts to sensitive bat species could include disturbance of roosting bats during construction, possible loss of roosting habitat from vegetation removal, and disturbance of roosting and foraging individuals. No apparent hibernacula (winter shelters occupied during dormancy) have been documented in the Monument. In the unlikely event that vehicles or construction equipment were to collapse caves, crevices, or other roosting features, localized damage to roosting bats could occur. All construction activities in the Monument would be designed specifically to avoid damaging geologic features and large ponderosa pines, and therefore would not be expected to damage bat roosting areas. No direct impacts would be anticipated for bats roosting in human-built structures. Disturbance or removal of such structures with potential to serve as bat roosts would be avoided.

Birds

Four sensitive bird species have some potential to occur within the boundaries of the Monument and Southwest Acquisition. No impacts to them would be anticipated as the result of the actions identified in this plan. Adverse impacts to nesting birds could result if construction activities were to occur within nesting territories or near active nests. Disturbances to birds during their sensitive nesting period could result in nest failure or abandonment. To avoid potential impacts, construction would occur outside the normal breeding season of most species (approximately April through July), or the proposed construction areas would be surveyed for nesting birds, and any found would be avoided or construction delayed until nesting activities were complete.

Vegetation & Woodland Management

Impacts from Fire Management

Untreated woodland stands on 4,085 acres of federal land would be exposed to direct and indirect impacts from insects, disease, and age. An increase in the number of red-needle trees as the result of insect activity would increase the flammability of the woodland areas. The amount of dead and down wood would continue to increase, as would dense thickets of piñon and juniper. The woodland areas would be increasingly vulnerable to fire disturbance, which would likely be in the form of wind-driven events that would burn entire stands of larger trees. Such fires could occur at any time during the year when fuel and weather conditions combined with a source of ignition. The chances of suppressing these fires would decrease as levels of dead and down wood, piñon and juniper regeneration, and piñon-juniper encroachment increased in the Planning Area.

Suppression efforts occurring under the extreme conditions common to late May and June would be focused on wildland-urban interface areas, not on protecting natural resources. Risk to life, safety, property and resources would be high and would continue to increase over time as fuel continued to accumulate and additional homes were built in the interface areas. An accumulation of fuels on BLM-administered lands could contribute to long-term cumulative effects caused by large, stand-replacing fires.

Applying thinning treatments on 2,236 acres would reduce the ability of fires to spread vertically and horizontally through woodland areas. These treatments would directly influence 14 percent of the Planning Area landscape to move towards attainment of FRC Class 1. Crown fires (in the treetops) would drop to the ground, and ground fire spread would be more controllable. The risk to the wildland-urban interface would decrease, and the wildlife habitat and visual resources functions served by untreated stands would be protected from complete loss. The indirect impacts of thinning would be an eventual shift to a grass understory, which would promote faster fire spread but at a much lower intensity.

Impacts from Noxious Weeds and Recreational Uses

The potential exists for indirect and long-term impacts from the introduction of noxious weed seeds or reproductive plant parts into treated or disturbed areas during management activities or by recreational users. Establishment of noxious weeds on the Planning Area would cause irreversible impacts by further displacing the natural plant community structure and function. Conscientious application of the BLM's Rio Puerco Field Office weed policy would mitigate this problem.

Impacts from Visual Resources

Visual resource management (VRM) classes assigned within the Monument would restrict to some degree the types and extent of vegetative treatment areas. The specific impacts would result from the conflict between the management goals of the VRM classes assigned and the vegetative communities for which the Monument and Southwest Acquisition were being managed. The maintenance of a VRM Class II area would require a higher level of restriction. Table 4-4 shows the acreage of VRM Classes II and III under each alternative.

TABLE 4-4

VISUAL RESOURCE MANAGEMENT CLASSES
FOR FEDERAL LAND IN THE MONUMENT AND SOUTHWEST ACQUISITION,
BY ALTERNATIVE
(acres)

Area VRM Class	Alternative A	Alternative B	Alternative C
Monument			
Class II	4,124	2,922	2,173
Class III	0	1,202	1,951
Southwest Acquisition			
Class II	0	965	965
Class III	0	0	0

Impacts from Wildlife Habitat

Big game winter habitat and migratory bird habitat have been identified as being desirable for the Planning Area. The western half of the Planning Area is identified as big game habitat, and essentially all of the Planning Area has migratory bird potential. Providing desirable habitats for these wildlife species would not interfere with woodland and vegetative treatments needed for the maintenance of land health requirements.

Visual Resources

Impacts from Fire Management/Ecosystem Restoration

Fire management has the potential to impact visual resources, depending on what is to be accomplished with the fire. Most of the negative impacts of fire on visual resources would be short term as the result of smoke and blackened areas. However, the long-term impacts of fire would improve the overall condition of the visual resources as understory and overstory vegetative conditions improved.

Impacts from Lands & Realty (Land Tenure Adjustment)

Without acquisition of the nonfederal lands within and north of the Monument, there would exist a potential for adverse impacts to the scenic values. Structures and other developments that did not blend with the features found in the surrounding monument landscape could be built on the nonfederal lands.

Impacts from Livestock Grazing

Removal of livestock from the 4,088 acres of federal lands would allow vegetation to gain vigor. Some range improvements that served no useful purpose would be removed, and sites previously occupied by these facilities would gradually rehabilitate and blend with the surrounding undisturbed landscape.

Discontinuing livestock grazing on the federal lands administered by the BLM would result in the need to build 7.5 miles of new fence to contain livestock on state and private lands, preventing trespass on and misuse of monument resources. When these fences were built, the line created by the narrow swath of vegetation cleared or altered for fence installation would not greatly impact the Monument's visual characteristics due to the vegetative communities in the area. Overall, discontinuing grazing, the expected increase in vegetation composition and production above the current levels, and the removal of some range improvements would result in long-term beneficial impacts on visual resources area-wide.

Impacts from Recreational Uses

Implementation of Alternative A would result in 4,124 acres or all of the federal land administered by the BLM within the Monument continuing to be managed under VRM Class II. The Monument's scenic values would be protected by limiting actions to those that could be low level, not attracting attention. None of the federal lands within the Monument would be managed under other VRM classes.

The need to provide visitor support facilities and resource protection measures in the areas where intensive recreational use was occurring would result in changes that would attract attention but would not dominate the viewshed. Some natural appearance would be lost as the result of the visual effects of recreation activities and developments.

Impacts from Special Geologic Features

The observation of special geologic features is not expected to create negative impacts on the Planning Area's visual resources. Where geologic study was desired, special considerations would be needed to mitigate the impact of surface disturbance (e.g., screening using topographic and/or vegetative features).

Impacts from Vegetation & Woodland Management

Ongoing vegetative treatments within the Planning Area would create short-term negative visual impacts as the result of two factors: (1) the disturbances to the soil and vegetation created by the initial treatment methods, and (2) the changes in landscape texture caused by reducing the density of piñon-juniper woodlands. Over the long term, however, a healthier and more diverse plant community would be created with greater ground cover. This would result in a more visually appealing landscape with greater variety in color, texture and composition.

Wildlife Habitat

Impacts from Access & Transportation

Under continued management of the Monument and Southwest Acquisition with approximately 24.2 miles of roads on the 5,089 federal acres, road density would be 3.04 miles of road per square mile of land. A total of 8.03 miles of trails would be used in the Monument, for 1.01 miles of trail per square mile of land. Both sources of wildlife habitat fragmentation would reduce habitat quality.

Impacts from Recreational Uses

The Monument contains no known critical or limiting habitat for wildlife species within the context of the Pajarito Plateau, Jemez Mountains, or Rio Grande Valley, and its small size reduces any overall impacts to any species present as affected local individuals or populations can relocate outside the Monument. However, both the original ACEC Protection Plan and Proclamation 7394 include the protection of habitat for non-game birds and improvement of big game winter habitat as primary goals. Therefore it is important to control the loss of individuals or local populations of wildlife species currently existing within the Monument, and to prevent their future decline.

Most direct impacts to wildlife would come from interactions with the visiting public, especially in the areas with the highest visitor use. These interactions would be localized around the developed recreation sites, including the main access road (BLM Road 1011), parking areas, picnic areas, and the Scenic Overlook. These areas collectively amount to approximately 215 acres or nearly 5 percent of the federal area of the Monument. Impacts would take the form of disturbance to breeding birds, trampling of small animals, attacks on wild animals from pets, vehicles running into or over animals on the access road, legal hunting and poaching of game species. Some of these direct impacts would be unavoidable because of the proximity of concentrated human use.

However, a few actions would help mitigate these impacts, including the following.

- Developing a "Watchable Wildlife" plan for the Monument that emphasizes ethical viewing practices;
- Maintaining current seasonal and day-use restrictions for BLM Road 1011;
- Modifying, replacing, or removing all barbed-wire fences in or around the Monument to conform to current BLM standards for occupied big game range; and
- Building a new boundary fence on the western and southern sides of the Monument to control livestock trespass from the surrounding lands.

Because of the Monument's small size and position on the lower edge of the Pajarito Plateau, significant indirect, cumulative, and/or long-term impacts to the area's wildlife would not be anticipated. Localized indirect impacts within monument boundaries would include habituation of wildlife species to the presence of human visitors, and loss of habitat as the result of increasing human use of the Monument.

Most wildlife habituation problems can be corrected by keeping facilities clean of edible materials, installing animal-proof garbage facilities, and educating the public about the dangers of feeding wild animals. Maintaining the day-use only restrictions would also help by limiting wildlife exposure to humans. Educational signs and other materials relating to snakes and appropriate wildlife viewing activities would help to decrease habituation as well.

Mitigating the loss of habitat that would result from increased visitor use may require future restrictions on the number of visitors in the Monument and Southwest Acquisition at any given time. This may also require limiting visitor access to various portions of the Monument and Southwest Acquisition.

Habitat fragmentation and degradation from visitor use and the expansion of surrounding communities would be offset to some degree by the removal of livestock grazing. An additional 375 AUMs of forage would be available for use by wildlife into the indefinite future.

Impacts from Vegetation & Woodland Management

Wildlife species and the types of habitat needed or desirable would influence the extent and type of woodland and/or vegetative treatments to be used. Big game winter and migratory bird habitat are two types of habitat identified as desirable for this area. The western half of the Planning Area has been identified with big game development and essentially all of the area has migratory bird potential.

Vegetation treatments on 2,236 acres of federal land in the Planning Area would have short-term effects on the quantity of wildlife habitat available. However, these treatments also would be expected to make a long-term improvement in both the quantity and quality of this habitat.

Cumulative Impacts under Alternative A

Cumulative impacts could result regarding each of the five issues being addressed in this plan. (These issues were presented in Chapter 1 in the section entitled, "Planning Issues.")

Issue 1—Land Tenure Adjustment

In considering this issue, the BLM is determining how land ownership is to be managed for the Planning Area, including the Monument. Past and present ownership includes 521 acres of state land and 10,025 acres of private land within and adjacent to the Monument. This mixed land tenure increases the difficulty of preventing trespass by monument users onto nonfederal land, and leaves open the opportunity for that land to be used in ways incompatible with or detrimental to the intended use and protection of monument resource values.

Under Alternative A, the BLM would seek to resolve this issue through establishing Cooperative Management Agreements (CMAs) with nonfederal landowners. Through specific terms of these agreements, the BLM would (1) allow visitor use in the Monument while applying restrictions to reduce trespass onto nonfederal land, and (2) limit the development of incompatible uses and facilities that would interfere with monument protection and management.

Assuming willing landowners, the CMAs would increase the BLM's management capabilities by allowing partial agency authority on up to 10,546 additional acres. This would create a future cumulative management capability on 15,635 acres. Other cumulative effects could only be brought about by further changes in the uses or restrictions included in the agreements; such changes are not presently being considered.

Issue 2—Access & Transportation

Alternative A includes roads (25.25 miles) and trails (8.43 miles) that have been developed for access to BLM land through past uses for various purposes. CMAs on the inholdings and edgeholdings would result in an approximate doubling of road and trail miles (estimate based on incomplete data) and tripling the acres available for recreational use. The Planning Area includes the Monument's 4,124 acres of federally managed lands. A recent acquisition increased federally managed acres to 5,089. The use of CMAs could bring this acreage to 15,635 in the future. This would help to disperse visitors, provide access to additional resources, and reduce future incidents of trespass by monument visitors onto nonfederal property.

Issue 3—Recreational Activities

Under Alternative A, CMAs would increase federally managed recreational opportunities in the Monument, reduce trespass onto private property by recreational visitors, and increase the potential acreage for dispersed recreational use to as much as 15,394 acres. These impacts would be dependent on the BLM's ability to negotiate agreements with willing landowners.

Past visitor numbers for the ACEC were reported at 8,600 in 1998, with 2004 visitor numbers at approximately 50,000 per year. Other attractions in the local vicinity include the Pueblo de Cochiti, Cochiti Lake, Santa Fe National Forest, Dome Wilderness and Bandelier National Monument. Visitor use figures are not clearly defined for the whole vicinity, but some of these attractions receive over 300,000 visits per year. Some of those visitors are likely to stop at the Monument as it becomes more widely known. Under Alternative A, user numbers could reach an estimated 150,000 per year during the life of this plan (approximately 20 years). Visitor use of these other attractions is not likely to have a direct effect on the Planning Area, but is likely to have a cumulative impact with BLM Monument activities on the surrounding communities.

Issue 4—Ecosystem Restoration

As a part of ACEC management, the BLM ripped a small acreage of meadow to promote the growth of grass. However, the scale of vegetative treatments currently being considered is not known to have occurred in the Planning Area in the past.

The federally managed land to receive vegetative treatments for hazardous fuels reduction and ecological condition improvement would total approximately 934 acres under Alternative A. CMAs would increase potential vegetative treatment acreage to 2,236 within the Planning Area. The U.S. Forest Service also would be expected to have treatment areas on the Santa Fe National Forest, which adjoins the Planning Area. How those treatments would relate to the BLM's is uncertain because of the size of the forest's potential treatment area. Vegetative condition on the treated BLM acres would be expected to move toward Fire Regime Condition Class 1, which is the desired condition.

Two grazing permits have authorized use of 4,088 acres on two grazing allotments in the past. Proclamation 7394 states, ". . . the Secretary of the Interior shall retire the portion of the grazing allotments within the [M]onument, pursuant to applicable law, unless the Secretary specifically finds that livestock grazing will advance the purposes of the proclamation." The Southwest Acquisition recently acquired by the BLM is not currently being grazed. It is desirable that it not be permitted for grazing so it can support the uses and protection of other monument values. The cumulative effect would be to have 5,053 acres out of grazing use. This would contribute to land health, improved wildlife habitat and ecological condition.

The shorelines of the Peralta Canyon stream channel within the Monument (approximately 2.05 miles) may not support riparian vegetation because flow is intermittent (occasional); the area may also lack the subsurface water needed to support such vegetation. The BLM would follow its monitoring plan to determine the area's capabilities. If riparian capabilities were determined to exist, the BLM would manage the area for riparian development. Portions of Peralta Canyon (approximately 3.5 miles) in the Planning Area support riparian habitat; the BLM would develop opportunities for their expansion through CMAs.

The cumulative acres expected to have improved land health and ecological condition would range between 5,053 and 7,289 acres. This figure is uncertain, because the extent of overlap has not been determined between vegetative treatment areas and the areas with discontinued grazing.

Issue 5—American Indian Uses & Traditional Cultural Practices

These uses and practices have been a major use of the Planning Area in the past. More recently, the area has had several other uses but has continued to support the traditional uses. Under Alternative A, the traditional uses would remain as they have been in recent past. However, the level of intrusions would be increased by the level of use by monument visitors.

CMAs would make additional cumulative acres available for these uses and traditional cultural practices. Some of the inholding acres and more than 25 percent of the edgeholdings identified for CMAs contain high-value traditional use areas. The CMAs would make intrusions by visitors in high-value traditional use areas more likely, and could result in the loss of some American Indian traditions.

ALTERNATIVE B

Access & Transportation

The road and trails management program would continue with minimal improvements to these means of access in the Monument and Southwest Acquisition. Roads would be designated as "Open" or "Limited" (to authorized or emergency use only), or they would be designated as "Closed" and would be rehabilitated by natural or mechanical processes. The BLM and/or Sandoval County would continue to maintain roads that were designated as "Open."

To enhance and protect American Indian uses and traditional cultural practices, special geologic features, water quality, visual resources, and the ecological condition of woodlands and other vegetation, the BLM would substantially reduce the number of miles of roads under Alternative B. Approximately 5.95 miles of roads would be designated as "Open" for public use and about 11.5 miles would be designated as "Limited" (to authorized or emergency use only). This would be a reduction of 45 percent of the total road miles available for public and/or administrative use, from 25.25 miles under Alternative A to 13.75 miles under Alternative B.

Approximately 11.5 miles of roads would be closed, with Best Management Practices being used to restore better ecological conditions where erosion has been a problem. Some of the roads to be closed have shown natural recovery capabilities that would be allowed to continue. The miles of foot trails that would remain open would be reduced by .8 miles to 7.23 miles.

These road changes would reduce the acreage available within the ROS motorized category by approximately 22 acres and increase the nonmotorized area by the same amount. Decreased public access would result in reduced trespassing on nonfederal land. Reduced access to remote areas would decrease the possibility of public safety concerns, but would increase the number of areas that were not easily accessible to emergency and rescue equipment.

Impacts from American Indian Uses & Traditional Cultural Practices

Under Alternative B, many of the 11.5 miles of roads that would be closed would limit access to areas with high traditional values. Infrequent, short-term closures could be requested on "open" roads and trails. These impacts on public access and transportation would be negligible as they would affect less than one percent of the total visitation time.

Consultation under each alternative would be according to the BLM's American Indian Consultation requirements and the agency's Cooperative Management Agreement with the Pueblo de Cochiti. This consultation would take place at the time of plan implementation. Affected tribes or pueblos would be consulted regarding their concerns about proposed access and transportation activities.

Impacts from Cultural Resources

Standard cultural resource practices would require inventory of closed roads before surface-disturbing rehabilitation work. .The special cultural resources requirement for inventory of existing roads before maintenance would require Class III survey of an additional 135 acres adjacent to 11.5 miles of roads.

Impacts from Lands & Realty (Land Tenure Adjustment)

Under Alternative B, the BLM would seek a road easement for 1.05 miles of road on privately owned inholdings. This easement would provide federal control of legal access for the main road (BLM Road 1011) through the Monument.

Impacts from Recreational Uses

Under Alternative B, the BLM would allow two-thirds fewer visitors (about 50,000 per year) than would be allowed under Alternative A (up to 150,000 per year). This would amount to allowing access for the equivalent of year 2004 recreational use on one-fourth of the current available road miles of access. Access would be provided to 241 acres used primarily for intensive recreation. The ROS Semi-Primitive Motorized area would be reduced by 22 acres. Improvement and maintenance of the 5.9 miles of BLM Road 1011 would be needed as the result of the recreational traffic volumes in the area.

Impacts from Visual Resources

Alternative B would provide extensive visual resource viewing associated with designated roads and trails. Maintenance of the 5.9 miles of BLM Road 1011 would be needed as the result of the recreational traffic volumes into the area. Roads would not be closed nor access impaired to protect visual resources.

Impacts from Wildlife Habitat

In part to protect wildlife habitat, 3.8 miles of road in the northwest portion of the Monument and Southwest Acquisition would be designated for "limited" use only. This designation would limit access by the general public to this part of the Planning Area.

American Indian Uses & Traditional Cultural Practices

The principal impacts to American Indian uses and traditional cultural practices under Alternative B would be the loss of privacy and some intrusion resulting from recreational visitation and the access provided for this visitation. The BLM does not propose direct action to limit or restrict use, or to control visitor numbers under Alternative B, the agency would use indirect actions such as media and education to reduce the rate of growth in visitor numbers.

Table 4-2 (under Alternative A) identifies factors affecting traditional uses under each alternative. In addition to the uses discussed below, intrusions and loss of privacy related to traditional uses would be influenced by fire management practices, observation and study of special geologic features, and vegetation and woodland management practices.

Consultations with tribes and pueblos would be the same under all alternatives, as described above under "Access and Transportation."

Impacts from Access & Transportation

Access and transportation decisions would result in either privacy for or intrusion into traditional uses by making areas more or less accessible. Reductions in the miles of roads and trails open under Alternative B would result in fewer intrusions into traditional uses and practices in the Planning Area.

Impacts from Cultural Resources

A lower possibility of archeological research involving excavation or collection of artifacts would exist under Alternative B than under Alternative A. Therefore, this type of potential intrusions into traditional practices and uses would be reduced under Alternative B.

Impacts from Lands & Realty (Land Tenure Adjustment)

Land tenure adjustments would likely influence privacy and intrusion related to traditional uses and practices. However, the magnitude of those impacts would be related to uses permitted on acquired land, whether inholdings or edgeholdings. These uses have not been determined, but approximately a third of the acreage in the North Edgeholding (the Cañada de Cochiti Grant) has been reported as having high traditional values.

Cultural Resources

Impacts from Access & Transportation

Under Alternative B, 5.95 miles of roads would be designated as "Open," while 7.8 miles would be designated as "Limited" (to authorized or emergency use only). The BLM has inventoried a total of 5.3 miles of road, and has taken actions to protect the archeological sites adversely impacted by road maintenance along BLM Road 1011. If archeological sites were located along the remaining 8.45 miles of road, maintenance of the road could damage or destroy them. Under Alternative B, the remaining sections of road designated as open or limited to authorized or emergency use would be inventoried by 2008. Any rehabilitation activities associated with closures of 11.5 miles of road would also be subject to cultural resources inventory and mitigation under the terms of the BLM's cultural resources protocol agreement with the State Historic Preservation Officer.

About 7.43 miles of existing trails would remain open, of which 1.81 miles have been inventoried for cultural resources. The most serious potential effects of the trail system would be the indirect impacts (illegal collection) discussed in "Impacts from Recreational Uses" above under Alternative A. Mitigation would consist of inventorying a 60-meter-wide corridor centered on these trails and carefully recording any sites found there. Closure of 1.9 miles of trail could also require inventory, depending on the rehabilitation measures proposed.

Impacts from American Indian Uses & Traditional Cultural Practices

Under Alternatives B and C, the BLM would discourage projects that involved excavation or collection of artifacts. This policy could limit opportunities for archeological research. If the North Edgeholding was acquired, this limiting provision would apply to a large segment of the archeological record in this region.

Impacts from Fire Management, Noxious Weeds, Special Geologic Features, and Vegetation & Woodland Management

The impacts on cultural resources from managing these other uses and resources would be the same under Alternative B as those discussed above under Alternative A.

Impacts from Lands & Realty (Land Tenure Adjustment)

Acquisition and withdrawal of mineral rights would help protect cultural resources and would bring additional sites under federal protection and management. Acquisition of 1.05 miles of easement along BLM Road 1011 would not have direct impacts to cultural resources, but use and maintenance of transportation routes within this easement would have some impacts. These are discussed above under "Impacts from Access and Transportation."

Impacts from Recreational Uses

The nature of recreational impacts to cultural resources is discussed above under Alternative A. Under Alternative B, visitation would be restricted to approximately 50,000 people per year. This decreased visitation would result in fewer direct impacts to cultural resources than those expected under Alternative A.

The BLM could partially mitigate indirect impacts (illegal collection) through inventory and documentation of surface artifacts, as well as collection of outstanding specimens. Under Alternative B, the BLM would require inventory of expanded buffer areas around all recreational developments for activities done on foot (e.g., hiking, informal picnicking, sightseeing). Cultural resources inventories for parking areas, scenic viewing areas, developed picnic areas and similar developments would include a 100-meter-wide buffer area. For hiking and equestrian trails, a 30-meter buffer would be inventoried, resulting in information being collected from a 60-meter-wide corridor.

Under this alternative, the BLM would maintain a restrictive policy toward projects involving collection or excavation of cultural resources not directly threatened. Archeological research within the Monument would have to rely primarily on inspection and analysis of surface assemblages, so indirect impacts (illegal collection) affecting such assemblages would be more serious under Alternative B than under Alternative A.

Fire Management/Ecosystem Restoration

Impacts from Access & Transportation

The impacts of access and transportation on fire management under Alternative B would be reduced from those under Alternative A, as fewer miles of roads and trails would be open for visitor use. Fire management could be used to increase vegetative diversity in more of the Planning Area, as visitors would not likely be present in areas with closed roads and trails.

Impacts from American Indian Uses & Traditional Cultural Practices, Cultural Resources, and Lands & Realty (Land Tenure Adjustment)

Impacts on fire management from these other uses and resources under Alternative B would be the same as those discussed above under Alternative A.

Impacts from Livestock Grazing

Discontinuing livestock grazing on 4,088 acres would provide regrowth opportunities for fine fuels (e.g., grasses) on this acreage, resulting in a more frequent fire return interval and creating conditions favorable to fires during cooler seasons rather than in hot summer months. This would reduce the size, intensity, and severity of fires on portions of the Planning Area.

In the long term, the fire-suppression activities associated with the protection of range improvements would no longer be needed. This would improve watershed conditions and winter habitat for big game.

Impacts from Recreational Uses

The BLM would not use fire as a management tool for ecosystem restoration in the 241-acre intensive recreation use area. (Refer to Map 3 in Chapter 1.)

Impacts from Vegetation & Woodland Management

Under Alternative B, the type of direct and indirect impacts discussed above under Alternative A would occur on approximately 13,399 acres of federal, state and private land in FRC Classes 2 and 3 (4,085 acres federal; 511 acres state; and 8,733 acres private). Approximately 12,588 acres of FRC Class 2 and 811 acres of FRC Class 3 would not be treated. The absence of livestock grazing would have direct effects on the untreated areas, resulting in an increase in herbaceous ground cover. However, the stem densities and degree of tree canopy cover on the untreated areas would prevent herbaceous species from growing there, so the overall increase of these species would be less than what would occur in the treated areas.

The type of direct and indirect impacts to the treated woodland stands under Alternative A would also occur under Alternative B on approximately 2,236 acres of public, state and private land. Tree thinning treatments would be applied to 934 acres of federal land, 10 acres of state land, and 1,292 acres of private land. On state and private lands, landowners would be consulted regarding treatments directly, or Cooperative Management Agreements would be set up. The absence of annual (yearlong or seasonal) livestock grazing in the treated areas would result in an increase of herbaceous ground cover.

Lands & Realty (Land Tenure Adjustment)

The BLM recognizes that nonfederal landowners would continue to have valid existing rights on federal lands.

Impacts from Access & Transportation, and Water Resources

The impacts on lands and realty under Alternative B from these other uses and resources would be the same as those discussed above under Alternative A.

Impacts from American Indian Uses & Traditional Cultural Practices

The Pueblo de Cochiti has indicated that a sizeable part of the Cañada de Cochiti Grant is an area of traditional interest. If the BLM acquired the North Edgeholding, the agency would work with tribal members to ensure that this interest was considered.

Impacts from Minerals

The BLM would acquire from willing sellers 10,105 acres of minerals not federally owned and withdraw them from mineral entry. Without acquisition, the potential would continue to exist for future development that would have long-term adverse impacts on monument values. Ownership associated with the inholdings would involve 837 acres of all minerals, with 9,268 acres of minerals (other than gold, silver and quicksilver/mercury) under the North Edgeholding.

Impacts from Recreational Uses

Acquisition of an easement across 1.05 miles of private land would ensure BLM administrative access to the northwestern portion of the Monument.

Acquisition of the North Edgeholding by the BLM would complete a federal land bridge from the Kasha-Katuwe Tent Rocks National Monument, north to the Santa Fe National Forest, Bandelier National Monument, and the Valles Caldera National Preserve. Consolidation of federal lands in this corridor would provide management continuity to the Planning Area and allow the BLM to manage it for protection of the geological, ecological, historical, cultural, recreational, and biological resources, as well as enhancing opportunities for environmental education and ecosystem management.

Impacts from Visual Resources

Acquisition would provide additional scenic values associated with the nonfederal lands to be enjoyed publicly, and place those lands under visual resource management objectives.

Livestock Grazing

Impacts from Lands & Realty (Land Tenure Adjustment)

The impacts on livestock grazing would be the same under Alternative B as those discussed under Alternative A above.

Recreational Uses

Impacts from Access & Transportation

The 5.95 miles of roads and 7.23 miles of trails designated as "Open" would provide ready access to 241 acres considered to be an intensive recreational use area. A total of 4,035 acres would have motorized access, while 1,054 acres would form a dispersed use area more favorably serving the needs of those who enjoyed hiking or activities not dependent on motorized vehicles. As a result of the access, little of the monument area would provide an experience of solitude.

Impacts from American Indian Uses & Traditional Cultural Practices, Lands & Realty (Land Tenure Adjustment), Special Geologic Features, and Wildlife Habitat

Under Alternative B, the impacts of these other uses and resources would be the same as those discussed above under Alternative A.

Impacts from Cultural Resources

Standard cultural resource practices would require survey of a 15-meter-wide strip along hiking and equestrian trails. Under Alternative B, survey of expanded buffer areas would require 149 acres of Class III inventory along 6.32 miles of trails, rather than the 38 acres that would be surveyed under standard practices.

The impact of an expanded cultural resources buffer survey around scenic viewing areas, picnic areas and similar development would depend on their size. As an example, a facility 100 meters by 100 meters in size would require survey of 2.4 acres under standard practices, but 21 acres total survey under Alternative B.

Impacts from Riparian Areas

Recreational activities such as hiking and picnicking would be prohibited along 1.89 miles (approximately 7 acres) of the Peralta Canyon stream channel that would be used to monitor the potential for development of riparian habitat. Designated trails would not be built, nor dispersed hiking allowed in these areas.

Impacts from Visual Resources

VRM Class II designation would place some limitations on the development of recreational facilities. However, under Alternative B 1,202 acres designated as VRM Class III would be available for recreational facility development.

Impacts from Water Resources

By using water sources that met health and safety requirements, the BLM would make available sufficient drinking water to meet the needs of the visiting public. A total water requirement has not been estimated.

Social & Economic Conditions

Impacts from Livestock Grazing, Recreational Uses, and Special Geologic Features

The impacts to social and economic conditions from managing these uses and resources in the Planning Area under Alternative B would be the same as those described above for Alternative A.

Impacts from Visual Resources

Implementing Alternative B would provide a VRM Class III designation for 1,202 acres within the Planning Area. This would cause potential adverse impacts to scenic values from the placement of structures and developments that did not blend with the features found in the surrounding landscape. This reduction in the visual values of the area would likely have a small impact on social conditions, although it would not likely impact economic conditions.

Soil & Water Resources

Impacts from Access & Transportation

Alternative B would offer fewer miles of road open for public use than Alternative A. The closing and restoration of existing roads would directly reduce some of the erosion and sediment delivery to stream channels in both the short and long term. Roadbed restoration or stabilization would bring a certain number of acres of vegetative production back onto the landscape, enhancing non-motorized types of recreation.

Impacts from Lands & Realty (Land Tenure Adjustment)

With the acquisition(s) of state and/or private inholdings, four wells would also be acquired. The BLM would register with the State Engineer's Office for the water rights associated with these wells.

Impacts from Livestock Grazing

Discontinuing the grazing permits on 4,088 acres and the acquisition of 965 acres not authorized for grazing under renewable permit would contribute to improved watershed and stream channel conditions on 5,053 acres, as the vegetative cover of the area improved.

Under Alternative B, short-duration periods of livestock grazing could be used as needed to help achieve vegetative/ecosystem restoration objectives. Some short-term disturbance to the soil surface would occur, but over the long term, this use by grazing livestock would result in greater growth of native plant communities. This plant growth could result in improved watershed conditions.

Impacts from Recreational Uses

Under Alternative B, the BLM would make available sufficient drinking water sources to meet the supply and quality needs of the visiting public. A total water requirement has not been estimated.

Impacts from Vegetation & Woodland Management

The impacts of this use on soil and water resources under Alternative B would be the same as those discussed above under Alternative A.

Special Geologic Features

Impacts from Access & Transportation

Closing unnecessary roads and trails would help to prevent access to 167 acres of special geologic resources, possibly preventing damage and erosion to these features in both the short and long term.

Impacts from Cultural Resources, Fire Management, Lands & Realty (Land Tenure Adjustment), Recreational Uses, and Wildlife Habitat

The impacts under Alternative B from managing these uses and resources would be the same as those described above for Alternative A.

Impacts from Visual Resources

Continuing to manage 3,887 acres of land within the Planning Area under VRM Class II objectives would help to protect the areas with special geologic features from disturbance.

Threatened, Endangered & Sensitive Wildlife Species

The impacts on these species of the actions proposed under Alternative B would be the same as those discussed above under Alternative A, with the following exception. If the BLM acquired the private and state inholdings, an additional 1,278 acres within the Monument would be protected from the possibility of habitat fragmentation that could otherwise result from the development of those lands.

Vegetation & Woodland Management

Impacts from Fire Management

For the impacts of insects, disease and age in the untreated woodland stands, refer to the discussion of the impacts from fire management on vegetation and woodland management above under Alternative A. Thinning treatments proposed under Alternative B would have the same types of direct and indirect impacts as those discussed under Alternative A, but the impacts would occur on 2,236 acres (934 acres federal, 10 acres state, and 1,292 acres private). These fuel treatments would directly cause 14 percent of the Planning Area's landscape to move towards attainment of FRC Class 1.

Impacts from Livestock Grazing

The use of short-duration livestock grazing would benefit long-term vegetative management within the Monument and Southwest Acquisition by increasing the growth of native plants.

Impacts from Noxious Weeds, Recreational Uses, and Wildlife Habitat

Refer to the discussions of impacts from these elements above under "Vegetation and Woodland Management" for Alternative A.

Impacts from Visual Resources

Continuing to manage 3,887 acres of the Planning Area under VRM Class II objectives would help to protect the areas with special geologic features from disturbance.

Visual Resources

Impacts from Fire Management/Ecosystem Restoration, Lands & Realty (Land Tenure Adjustment), Livestock Grazing, Special Geologic Features, and Vegetation & Woodland Management

The impacts on the visual resources in the Planning Area from managing these other resources and uses would be the same under Alternative B as those discussed above under Alternative A.

Impacts from Recreational Uses

Implementation of Alternative B would result in 3,887 acres or 60 percent of the federal land administered by the BLM within the Planning Area being managed under a VRM Class II designation. The Planning Area's scenic values would be protected by limiting actions to those that could be low level, not attracting attention.

The remaining 1,202 acres of federal land administered by the BLM would be assigned VRM Class III, which would allow for expansion of recreational visitor use facilities and access routes. Providing visitor support facilities and resource protection measures in the areas where intensive recreation use was occurring would result in changes that would attract attention but would not dominate the viewshed. However, the visual effects of recreational activities and developments would contribute to the loss of the general natural appearance in these Class III areas (refer to Map 15 in the map section).

Wildlife Habitat

Impacts from Access & Transportation

Continued management of the Planning Area with approximately 5.95 miles of roads on the 5,089 federal acres, road density would be .75 miles of road per square mile of land. A total of 7.23 miles of trails would be used on federal land in the Planning Area, for .91 miles of trail per square mile of land. Both sources of wildlife habitat fragmentation would reduce habitat quality.

Impacts from Lands & Realty (Land Tenure Adjustment)

If the BLM acquired 1,278 acres of private and state inholdings in the Monument, and/or 9,268 acres of private edgeholdings in the Planning Area, protection against future habitat fragmentation that could result from the development of these lands would be provided. The acquisition of edgeholdings would also help by providing a buffer of land that would not be developed but would be available for use by the Monument's wildlife.

Impacts from Recreational Uses

Most direct and indirect impacts to wildlife under Alternative B would be the same as those discussed above under Alternative A. Some of these direct impacts would be unavoidable because of the proximity of concentrated human use.

However, a few actions would help mitigate these impacts, including the following.

- Maintaining current day-use and seasonal restrictions.
- Limiting the speed of vehicles accessing the area to allow motorists sufficient time to react to animals stepping into the road.
- Limiting the off-road access to the west side of the Monument beyond the Scenic Overlook to non-motorized use only.

Impacts from Vegetation & Woodland Management

Impacts on wildlife habitat from the actions proposed under Alternative B would be of the same type as those discussed above under Alternative A. However, under Alternative B, additional acreage of woodlands would be thinned (10 acres of state land and 1,292 acres of private land). In the long term, more acres of wildlife habitat would benefit from these treatments.

Cumulative Impacts under Alternative B

Cumulative impacts could result for each of the five issues being addressed in this plan. In large part these cumulative impacts would result from acquiring adjoining lands (assuming willing sellers) and managing them to complement the protection and use of monument values.

Issue 1–Land Tenure Adjustment

Under Alternative B, the BLM would seek to resolve this issue by acquiring land from willing sellers. Acquisitions would allow the agency to develop facilities and provide for monument visitor uses compatible with protection. The capability for protecting and using monument resources would increase from the current 5,089 acres to as much as 15,635 acres cumulatively. Future cumulative effects could only be brought about by more effective management decisions.

Issue 2—Access & Transportation

Under Alternative B, 5.95 miles of roads and 7.23 miles of trails would be designated for public use within the Monument and Southwest Acquisition. These facilities were developed in the past for access to existing federal lands for various purposes. Acquisition of inholdings and edgeholdings would include additional miles of roads and trails being available for use. This would likely double the road and trail mileage, although inventory is not current. The cumulative mileage would help to disperse visitors, provide access to additional resources, and reduce future incidents of trespass by monument visitors onto nonfederal property.

Issue 3—Recreational Activities

Visitors using the area as an ACEC numbered 8,600 in 1998. In 2004, visitors numbered 50,000. Visitor use would likely increase slowly over time. The capacity of the Planning Area to handle visitor use would be increased if the inholdings and North Edgeholding were acquired, making available added miles of roads and trails. Facilities and visitor management capability would be improved, but these improvements would be directed at restraining use levels rather than encouraging the rapid growth of visitor numbers.

Nearby Cochiti Lake facilities were reported to have been visited in 2003 and 2004 by 380,000 and 310,000 people, respectively. Although the Santa Fe National Forest reports visitors to the forest and the Dome Wilderness, the available reports do not indicate visitors by location. Therefore, visitor numbers that could be cumulative with those of the Kasha-Katuwe Tent Rocks National Monument cannot be determined. Bandelier National Monument reported year 2002 visits at 291,436; 2003 visits at 287,096; and 2004 visits at 263,285, respectively. The Bandelier entrance is far enough from the Kasha-Katuwe Tent Rocks National Monument that the cumulative effect of Bandelier's visitors would likely be negligible at Tent Rocks.

Visitors to these other attractions would not directly affect the Monument, but the cumulative effects on the vicinity surrounding the Monument could be important.

Issue 4—Ecosystem Restoration

Under Alternative B, the federal land to receive vegetative treatments for hazardous fuels reduction and ecological condition improvement would total approximately 934 acres. Proposed acquisitions would increase potential vegetative treatment acreage to 2,236 within the Planning Area. The type of cumulative impacts expected from vegetative treatments (on 2,236 acres) and the absence of livestock grazing (on 5,053 acres) would be the same under Alternative B as those discussed above under Alternative A.

Portions of Peralta Canyon (approximately 3.5 miles) in the Planning Area support riparian habitat. Opportunities for their expansion would occur as the result of land acquisition.

The acres expected to benefit from improved land health and ecological condition would range between 5,053 and 7,289 acres cumulatively. This figure is uncertain, because the extent of overlap has not been determined between vegetative treatment areas, the areas with discontinued grazing, and those with riparian habitat development.

The cumulative impacts of grazing discontinuance, vegetation treatments, riparian habitat development, and timely road maintenance would be expected to improve watershed condition in both the short and long terms. If vegetation treatments were carried out with wheels or tracks, some short-term disturbance to the soil surface would temporarily increase erosion and sedimentation.

Issue 5—American Indian Uses & Traditional Cultural Practices

Intrusions created by traffic on the Planning Area's main road (BLM Road 1011) would reduce the level of privacy in the portion of the Monument that has been used for traditional purposes. Estimating the size of this area is somewhat speculative (because the traditional use areas are not specifically defined), but assuming that the intrusions ran the full length of BLM Road 1011 (5.9 miles), and assuming the area of disturbance extended ½ mile on each side of the road, the full size of the disturbed area could be as much as 3,776 acres. If the disturbance only extended ⅛ mile on each side of the road, the total area of disturbance could be as small as 944 acres. The completion of the recommended acquisitions could more than double the potential area of intrusion.

ALTERNATIVE C

Access & Transportation

The road and trails management program would continue with minimal improvements to these means of access in the Monument and Southwest Acquisition. Roads would be designated as "Open" or "Limited" (to authorized or emergency use only), or they would be designated as "Closed" and would be rehabilitated by natural or mechanical processes. The BLM and/or Sandoval County would continue to maintain the roads that were designated as "open."

To enhance and protect the ecological condition of woodlands and other vegetation under Alternative C, the BLM would substantially reduce the number of miles of roads that would be open. Approximately 9.1 miles of roads would be designated as "Open" for public use and about 5.75 miles would be designated as "Limited." This would be a total reduction of 41 percent of the road miles open for public and/or administrative use, from 25.25 miles under Alternative A to 14.85 miles under Alternative C.

About 10.4 miles of roads would be closed, with Best Management Practices being used to restore better ecological conditions where erosion has been a problem. Some of the roads to be closed have shown natural recovery capabilities that would be allowed to continue. These road changes would increase the acreage available within the ROS motorized category by approximately 253 acres and decrease the nonmotorized area by the same amount.

The miles of foot trails that would remain open would be increased by .9 miles to 8.93 miles. Increased public trail access would likely result in increased trespass on nonfederal land. Reduced road access to remote areas would decrease the possibility of public safety concerns, but would increase the number of areas that were not easily accessible to emergency and rescue equipment.

Impacts from American Indian Uses & Traditional Cultural Practices

Nearly half the road miles would be in portions of the Monument with high traditional use values. Infrequent short-term closures could be requested on these or other roads and trails. (Note: These closures would be announced on the BLM website, the customer service telephone line and local radio stations, and on signs posted outside the gate at the Monument entrance on Tribal Road 92. Visitors would be encouraged to go to nearby Cochiti Lake or the Cochiti Golf Course and Clubhouse until BLM Road 1011 was reopened.) The impacts of these closures on access by the general public would be negligible.

Under Alternative C, the usual BLM consultation procedures would be in effect, under which affected tribes or pueblos are consulted regarding their concerns about proposed access and transportation activities. These consultations with tribes would be the same under all the alternatives.

Impacts from Cultural Resources

Standard cultural resource practices would require inventory of closed roads before surface-disturbing rehabilitation work. The special cultural resources requirement for inventory of existing roads before maintenance would require Class III survey of an additional 70 acres adjacent to 5.75 miles of roads and easements.

Impacts from Lands & Realty (Land Tenure Adjustment)

Under Alternative C, the BLM would seek an easement for 1.05 miles of road on privately owned inholdings within the monument boundary. This easement would provide federal control of legal access for the main road through the Monument.

Under this alternative an additional 1.4 miles of road easement would be acquired for a northeastern access to the Monument (refer to Map 8 in the map pocket). This easement would be outside the monument boundary, but would provide a secondary entrance to the Monument that would help to disperse visitors and be likely to increase visitor use.

Impacts from Recreational Uses

Alternative C would provide for continued intensive recreational use associated with designated roads and trails. Improvement and maintenance of the 5.9 miles of BLM Road 1011 would be needed as the result of the recreational traffic volumes into the area. Implementation of Alternative C would accommodate some increase in recreational visits, and ensure uninterrupted entrance to the Monument on both BLM Road 1011 and a new northeast entrance road.

Impacts from Visual Resources

Under Alternative C, federal land would be assigned VRM Class II on 3,138 acres and Class III on 1,951 acres. The Class II acres would require reduced levels of visual intrusion but neither management class would require roads to be closed nor access impaired to protect visual resources.

Impacts from Wildlife Habitat

Habitat management would impact access and transportation in the western portion of the Monument and Southwest Acquisition, where 3.8 miles of roads would be designated for "limited" use only to protect big game winter habitat. Public access would be limited in this part of the Planning Area. Another impact on access and transportation would be traffic controls such as speed limits at wildlife crossings.

American Indian Uses & Traditional Cultural Practices

Impacts from Access & Transportation

The principal impacts to American Indian uses and traditional cultural practices under Alternative C would be intrusion and the loss of privacy resulting from recreational visitation. (Refer to Table 4-2 under Alternative A for factors directly affecting traditional uses under each alternative.) Although the BLM would limit visitation to about 50,000 visits per year (more if significant new acreage is added through land tenure adjustment), the agency also proposes under this alternative that a new access route be built into the northeast corner of the Monument (refer to Map 8). This route would pass near important traditional use areas and would likely be more disruptive to those using the areas for traditional purposes than visitation elsewhere in the Planning Area. Consultations with tribes would be ongoing under any alternative selected. Under Alternative C, brief temporary closures of the Monument could be made to accommodate traditional uses.

Impacts from Lands & Realty (Land Tenure Adjustment)

Land tenure adjustments would likely affect privacy and intrusions related to traditional uses and practices. However, the magnitude of those impacts would be related to the types of uses permitted on acquired land, whether inholdings or edgeholdings. Permitted uses would minimize intrusion while allowing use and protection of monument resource values.

Cultural Resources

Impacts from Access & Transportation

Under Alternative C, 9.1 miles of roads would remain open and 5.75 miles would be designated as "Limited" (to authorized or emergency use only). The BLM has inventoried a total of 5.3 miles, and taken actions to protect the archeological sites adversely impacted by road maintenance along BLM Road 1011. As under Alternative B, if archeological sites were located along the remaining 9.55 miles of road, maintenance of the road could damage or destroy them. Under Alternative C, the remaining sections of road designated as open or open to limited use would be inventoried by 2008. Any rehabilitation activities associated with closures of 10.4 miles of road would also be subject to cultural resources inventory and mitigation under the terms of the BLM's cultural resources protocol agreement with the State Historic Preservation Officer.

About 8.93 miles of existing trails would remain open, of which 1.81 miles have been inventoried for cultural resources. The most serious potential effects of the trail system would be the indirect impacts (illegal collection) discussed under "Impacts from Recreational Uses" above in Alternative A. Mitigation would consist of inventorying a 60-meter-wide corridor centered on these trails and carefully recording any sites found there. The .4 mile of trail proposed for closure under Alternative B has already been inventoried, and no cultural resources would be affected by their rehabilitation.

Impacts from American Indian Uses & Traditional Cultural Practices

Under Alternatives B and C, the BLM would discourage projects that involved excavation or collection of artifacts. This policy could limit opportunities for archeological research. If the North Edgeholding was acquired, this limiting provision would apply to a large segment of the archeological record in this region.

Impacts from Fire Management, Noxious Weeds, Special Geologic Features, and Vegetation & Woodland Management

The impacts on cultural resources from managing these other uses and resources would be the same under Alternative C as those discussed above under Alternative A.

Impacts from Lands & Realty (Land Tenure Adjustment)

Acquiring 1,278 acres of nonfederal surface inholdings within the Monument would enhance protection of cultural resources on these acres. Acquisition and withdrawal of minerals would also help protect cultural resources. Acquiring 9,268 acres of the North Edgeholding is recommended to bring additional sites under federal protection and management.

Acquisition of 1.05 miles of easement along BLM Road 1011 would not have direct impacts on cultural resources, but use and maintenance of transportation routes within this easement would have some impacts. These impacts are discussed above under "Impacts from Access and Transportation."

Impacts from Recreational Uses

The nature of direct and indirect recreational impacts to cultural resources, as well as mitigation measures to decrease these impacts, is discussed above under Alternative A. Under Alternative C, visitation would be restricted to approximately 50,000 people per year for the life of the plan. A total of 8.93 miles of “Open” hiking trails would be available for use, rather than the 8.03 miles to be open under Alternative A.

Under Alternative C, the BLM would follow the same policies described above under Alternative B to mitigate both the direct and indirect impacts of recreational uses to cultural resources. Because the agency would be restricting visitor numbers to 50,000 people per year rather than accommodating the 150,000 people per year expected under Alternative A, the direct and indirect impacts to cultural resources would be somewhat reduced under Alternative C, even with the slightly increased mileage of open trails.

Fire Management/Ecosystem Restoration

Impacts from Access & Transportation

Under Alternative C, fire management could be used to increase vegetative diversity to a greater extent than under Alternative A, as fewer miles of roads would be open (9.1 miles instead of 24.2 miles). Visitor accessibility by road would be more limited in some areas available for vegetative treatment, although a slightly greater mileage of trails would be open under Alternative C than under Alternative A (8.93 miles instead of 8.03 miles).

Impacts from American Indian Uses & Traditional Cultural Practices, Cultural Resources, and Lands & Realty (Land Tenure Adjustment)

The impacts of managing these uses and resources on fire management under Alternative C would be the same as those discussed above under Alternative A.

Impacts from Livestock Grazing

Under Alternative C, livestock grazing could be used as needed to help achieve vegetative/ecosystem restoration objectives. This short-duration, nonrenewable use of non-native, noxious weeds and fine fuels (e.g., grasses) by grazing livestock would result in greater growth of native plant communities in the long-term. This plant growth could result in improved watershed conditions.

Impacts from Recreational Uses

The BLM would not use fire as a management tool for ecosystem restoration in the 280-acre intensive recreation use area.

Impacts from Vegetation & Woodland Management

The impacts of vegetation and woodland management on fire management under Alternative C would be the same as those discussed above under Alternative B.

Lands & Realty (Land Tenure Adjustment)

The BLM recognizes that nonfederal landowners would continue to have valid existing rights on federal lands.

Impacts from Access & Transportation, Livestock Grazing, and Water Resources

The impacts under Alternative C from these uses and resources would be the same as those described above under Alternative A.

Impacts from American Indian Uses & Traditional Cultural Practices, Minerals, Recreational Uses, and Visual Resources

The impacts under Alternative C from these other uses and resources would be the same as those described above under Alternative B.

Livestock Grazing

Impacts from Lands & Realty (Land Tenure Adjustment)

The impacts under Alternative C would be the same as those discussed above under Alternative A.

Recreational Uses

Impacts from Access & Transportation

The 9.1 miles of roads and 8.03 miles of trails would provide ready public access to 280 acres considered to be an intensive recreational use area. A total of 4,310 acres would be accessible by motorized vehicle. As a result of this access, little of the Monument would provide an experience of solitude.

The 8.93 miles of trails would provide public access to 779 acres that would form a dispersed use area beyond the intensive use area. This dispersed use area would more favorably serve the needs of those who enjoyed hiking, and would positively impact recreational uses in the Planning Area by distributing visitor use more widely.

Impacts from American Indian Uses & Traditional Cultural Practices, Lands & Realty (Land Tenure Adjustment), Special Geologic Features, and Wildlife Habitat

The impacts from these resources and uses would be of the same type under Alternative C as those discussed above under Alternative A.

Impacts from Cultural Resources

Standard cultural resource practices would require survey of a 15-meter-wide strip along hiking and equestrian trails. Under Alternative C, survey of expanded buffer areas would require 190 acres of Class III inventory along 8.06 miles of trails, rather than the 48 acres that would be surveyed under standard practices.

The impact of an expanded cultural resources buffer survey around scenic viewing areas, picnic areas and similar developments would depend on their size. As an example, a facility 100 meters by 100 meters in size would require survey of 2.4 acres under standard practices, but 21 acres of survey under this alternative.

Impacts from Riparian Areas

The impacts would be the same under Alternative C as those discussed above under Alternative B.

Impacts from Visual Resources

On the 3,138 federal acres of the Planning Area designated as VRM Class II, some limitations would be placed on the development of recreational facilities. The Class III VRM designation on 1,951 federal acres would require only that development did not draw attention away from the naturalness of the area.

Impacts from Water Resources

Under Alternative C, the BLM would make available drinking water sources that met the supply and quality needs of the visiting public. A total water requirement has not been estimated.

Social & Economic Conditions

Impacts from Livestock Grazing, Recreational Uses, and Special Geologic Features

Under Alternative C, the impacts of these uses and resources on social and economic conditions would be the same as those discussed above under Alternative A.

Impacts from Visual Resources

Implementing Alternative C would provide a VRM Class III designation for 1,951 federal acres within the Planning Area. This would cause potential adverse impacts to scenic values from the placement of structures and developments that did not blend with the features found in the surrounding landscape. This reduction in the visual values of the area would likely have a small impact on social conditions, although it would not likely impact economic conditions.

Soil & Water Resources

Impacts from Access & Transportation, Lands & Realty (Land Tenure Adjustment), Livestock Grazing, Recreational Uses, and Vegetation & Woodland Management

The impacts of these uses to soil and water resources under Alternative C would be the same as those discussed above under Alternative B.

Special Geologic Features

Impacts from Access & Transportation

The impacts of this use on special geologic features would be the same under Alternative C as those discussed above under Alternative B, with the following exceptions.

The miles of roads and trails open for public use under Alternative C would reduce the level of protection for the special geologic features. Public access to 167 acres of special geologic resources could result in damage or destruction. On the other hand, a greater opportunity for observance and study of these resources would be provided. Recommended acquisitions would expand this acreage by 462 acres of inholdings and 1,655 acres of edgeholdings, with similar impacts there.

If trails or roads were built near these special features in the future, indirect impacts could include erosion and resultant damage. Monitoring would provide information to guide mitigation and protective measures.

Impacts from Cultural Resources, Fire Management, Lands & Realty (Land Tenure Adjustment), Recreational Uses, and Wildlife Habitat

The impacts on special geologic features of managing these uses and resources under Alternative C would be the same as those discussed above under Alternative A.

Impacts from Visual Resources

Continuing to manage 3,138 federal acres of the Planning Area under VRM Class II objectives would help to protect the areas with special geologic features from disturbance.

Threatened, Endangered & Sensitive Wildlife Species

The impacts on these species of the actions proposed under Alternative C would be the same as those discussed above under Alternative A, with the following exceptions. Acquiring the state and private inholdings and edgeholding would protect an additional 10,546 acres within the Planning Area from habitat fragmentation that could result from development on those lands. Now that the BLM has acquired the Southwest Acquisition, the agency can control access to the road that enters Section 31, T. 17. N., R. 5 E. from the south.

Vegetation & Woodland Management

Impacts from Fire Management

Under Alternative C, the impacts of fire management on vegetation and woodland management would be the same as those discussed above for Alternative B.

Impacts from Noxious Weeds, Recreational Uses, and Wildlife Habitat

Refer to the discussions of the impacts of these elements above under "Vegetation and Woodland Management" for Alternative A.

Impacts from Livestock Grazing

The use of short-duration, nonrenewable livestock grazing within the Planning Area would benefit long-term vegetation management by increasing the growth of native plants.

Impacts from Visual Resources

The assignment of VRM Class II to 3,138 federal acres within the Planning Area would restrict to some small degree the types and extent of vegetative treatment areas.

Visual Resources

Impacts from Fire Management/Ecosystem Restoration, Lands & Realty (Land Tenure Adjustment), Livestock Grazing, Special Geologic Features, and Vegetation & Woodland Management

For visual resources, the impacts of managing the above resources and uses would be the same under Alternative C as those described above under Alternative A.

Impacts from Recreational Uses

Implementation of Alternative C would result in 3,138 federal acres being assigned VRM Class II. The Monument's scenic values would be protected by limiting actions to those that would be low level, not attracting attention.

The remaining 1,951 acres of federal lands administered by the BLM would be assigned VRM Class III, which would allow for expansion of visitor use facilities. Such facilities and resource protection measures in the areas of intensive recreational use would result in changes that would attract attention but not dominate the viewshed. The visual effects of recreational activities and developments would contribute to the loss of the general natural appearance in these Class III areas (refer to Map 17 in the map section).

Wildlife Habitat

Impacts from Access & Transportation

Management of the Planning Area with approximately 14.85 miles of roads on the 5,089 federal acres would result in a road density of approximately 1.87 miles of road per square mile of land. A total of 8.93 miles of trails also would be used, resulting in considerable fragmentation of the wildlife habitat.

Impacts from Lands & Realty (Land Tenure Adjustment)

The impacts of these uses on wildlife habitat under Alternative C would be the same as those discussed above under Alternative A.

Impacts from Recreational Uses, and Vegetation & Woodland Management

The impacts of these uses on wildlife habitat under Alternative C would be the same as those discussed above under Alternative B.

Cumulative Impacts under Alternative C

Cumulative impacts could result regarding each of the five issues being addressed in this plan. In large part these impacts would result from acquiring adjoining lands (assuming willing sellers) and managing them to complement the protection and use of monument values.

Issue 1—Land Tenure Adjustment

The cumulative impacts of land acquisitions proposed under Alternative C generally would be of the same type and magnitude as those discussed above for Alternative B.

However, the main monument road (BLM Road 1011) crosses approximately 1.05 miles of private land on which there is need for a legal easement. Under Alternative C, the BLM would seek an additional 1.7 miles of easement across the North Edgeholding for an alternative monument access road. The cumulative need for easement would be 2.75 miles to provide total legal access to and through the Monument. If land acquisitions were completed, the lands across which access was required would be under federal ownership, thus removing the need for easements.

Issue 2—Access & Transportation

Under Alternative C, 9.5 miles of roads and 8.93 miles of trails would be designated for public use within the Monument and Southwest Acquisition. Acquisition of inholdings and edgeholdings would likely double the road and trail mileage, although inventory is not current. The cumulative mileage would help to disperse visitors, provide access to additional resources, and reduce future incidents of trespass by monument visitors onto nonfederal property.

Issue 3—Recreational Activities

Past visits numbered 8,600 per year in 1998, when the Monument was managed as an ACEC. By the end of 2004 after monument designation, the visits per year numbered 50,000. Visitor use would likely continue to increase over time, but preferably for the Monument at a slower rate than in the recent past.

The capacity of the Planning Area to handle visitor use would be increased if the inholdings and North Edgeholding were acquired. The BLM would add another monument entrance and a 39-acre intensive use area equipped with parking, restrooms, picnicking facilities, and a trailhead. Facilities and management would be improved, but would be directed at establishing sustainable use levels rather than encouraging rapid growth in visitor numbers.

Under an adaptive management approach, the BLM would monitor visits, visitor responses, facilities and management practices, and their impacts on natural resource conditions for a 5-year period. At the end of this period, the agency would evaluate the monitoring results. The number of visits allowed per year could be reduced, if the monitoring results indicated the need to minimize natural resource degradation.

Visits to nearby attractions including the Pueblo de Cochiti, Cochiti Lake, Santa Fe National Forest, Dome Wilderness, and Bandelier National Monument would not directly affect the Kasha-Katuwe Tent Rocks National Monument. However, the cumulative effects of this visitation on the vicinity surrounding the Monument could be important.

Issue 4–Ecosystem Restoration

The cumulative impacts to land health and ecological condition in the Planning Area as the result of vegetation treatments, discontinuance of livestock grazing, riparian habitat development, and timely road maintenance would be substantially the same under Alternative C as those discussed above under Alternative B.

Issue 5—American Indian Uses & Traditional Cultural Practices

Intrusions created by traffic on the Planning Area's main road (BLM Road 1011) would reduce the level of privacy in the portion of the Monument that has been used for traditional purposes. Under Alternative C, another access road that would pass near important traditional use areas is proposed. Travel on this road by visitors and other users could disrupt traditional uses to a more serious extent than the use on roads open to public access under Alternatives A and B. Estimating the size of this affected area is somewhat speculative, but assuming that the intrusions ran the full length of both BLM Road 1011 (5.9 miles) and the new eastern access road proposed in Alternative C (4 miles), and assuming that the area of disturbance extended ½ mile on each side of the road, the full size of the disturbed area could be as much as 6,336 acres. If the disturbance only extended ⅛ mile on each side of the road, the total area of impact could be as small as 1,584 acres. The completion of the recommended acquisitions could add substantially to the potential area of intrusion.

Chapter 5

CHAPTER 5

CONSULTATION AND COORDINATION

INTRODUCTION

This chapter describes the consultation and coordination activities the BLM has carried out with interested agencies, organizations, and individuals while preparing this document. Public involvement is a vital component in preparing this Resource Management Plan for the Kasha-Katuwe Tent Rocks National Monument.

The National Environmental Policy Act (NEPA) requires the public's involvement in the decision making process as well as allowing for full environmental disclosure. Guidance for implementing public involvement is found at Title 43 of the Code of Federal Regulations (CFR), Part 1610.2, thereby ensuring that federal agencies make a diligent effort to involve the public in preparing NEPA documents.

Consultation and coordination have occurred in a variety of ways throughout the planning process. Formal and informal efforts have been made to involve the public, other federal agencies, American Indian tribal groups, state and local governments.

Formal public involvement for this RMP/EIS has occurred in two phases.

- Public scoping before NEPA analysis to obtain public input on issues and proposed alternatives, and

- Public review and comment on the Draft RMP/EIS, which included analyzing possible environmental impacts and identifying the preferred alternative.

The final section of the chapter contains the comments received as a result of the 90-day review of the Draft RMP/EIS, and the BLM's responses to these comments. The comment letters and e-mails are printed in full at the end of the chapter.

TRIBAL CONSULTATION AND COORDINATION

To provide for more consistent, effective and collaborative management of the federal and pueblo lands within and adjacent to the area known as Tent Rocks, the U.S. Department of the Interior/BLM and the Pueblo de Cochiti have entered into an Inter-Governmental Cooperative Agreement. Under this agreement, the BLM seeks the pueblo's participation and involvement in public land use planning by personal invitation to agency activities and meetings. The pueblo has agreed to identify and provide appropriate staff for planning and implementing the initiatives developed under the agreement.

The agency held a pre-planning meeting with officials from the pueblo on May 12, 2003, to talk about the planning process, steps, and preliminary issues to be addressed in the plan. The agency held another meeting regarding traditional cultural properties in August 2003. Those in attendance at this meeting included pueblo officials, council members, BLM managers, the BLM's National Landscape Conservation System Manager, and a Cultural Resource Specialist.

The BLM mailed certified, return-receipt form letters to nine local pueblos and tribes. A separate, more detailed letter was sent to the Governor of the Pueblo de Cochiti. Through these letters, the agency asked these groups to submit (1) any concerns about traditional cultural practices or other issues that might be affected by this land use plan, (2) information on how they would like to be involved in the planning process, and (3) names of other individuals or organizations that should be notified or consulted concerning this plan. With each of these 10 letters were enclosed a copy of the NOI, a map of the Planning Area, and a brief description of the preliminary issues to be considered in the plan.

The BLM received two responses to this request, one from the Hopi Tribe and the other from the Jicarilla Apache Nation. The Jicarillas did not request further involvement in the plan, but wish to be kept informed under the provisions of the Native American Graves Protection and Repatriation Act (which applies to the disposition of American Indian cultural and human remains). The Hopi Tribe expressed concern about the moral, spiritual and financial responsibility placed on local pueblos for the disposition of ancestral remains and cultural items discovered on ancestral lands as a result of this federal undertaking. The tribe also supports the road closure and travel restrictions proposed for the monument to protect natural and cultural resources. The Hopis defer consultation to the Pueblos of Cochiti, Jemez, and Santo Domingo for their identification of places of cultural importance. Additionally, the Hopi Tribe supports the rights of the local pueblo tribes to access and use areas under Executive Order 13007 and the American Indian Religious Freedom Act.

CONSULTATION REGARDING WILDLIFE

The BLM must consult with the U.S. Fish and Wildlife Service under Section 7 of the Endangered Species Act of 1973 before beginning an agency project that may affect any federally listed, special-status plant or wildlife species or its habitat. This proposed plan is considered to be a major federal action, so the BLM initiated informal consultation. Letters documenting this activity are on file at the BLM Albuquerque District, Rio Puerco Field Office.

CONSULTATION WITH OTHER COOPERATING ENTITIES

Although the BLM did not sign Memoranda of Understanding with most tribal, state, or local governmental agencies, Rio Puerco Field Office personnel worked closely with these cooperating agencies throughout the planning process. The New Mexico Governor's Office and affiliated state agencies have been involved and provided input into the Draft RMP/EIS and the Proposed RMP/Final EIS. The Sandoval County Board of Commissioners also has been involved and kept up to date on the development of the RMP.

CONSISTENCY WITH OTHER PLANS

BLM planning regulations require that RMPs be consistent with officially approved or adopted resource-related plans, policies and procedures of other federal agencies, American Indian tribes, and state and local governments. To ensure such consistency, the BLM has sent letters to all the groups and agencies listed in Table 5-1. These entities received copies of the Draft RMP/EIS for their review, and have received a copy or been notified of the availability of this Proposed RMP/Final EIS.

No inconsistencies are known to exist between resource allocations and uses proposed in the plan alternatives and officially approved or adopted resource-related plans of any group or agency mentioned in Table 5-1.

PUBLIC PARTICIPATION

Public participation in this RMP is a dynamic process that continues throughout plan development and beyond. Scoping for this RMP/EIS began with a meeting of BLM staff from a variety of professional specialties (an Interdisciplinary Planning Team) to discuss resource needs, program requirements and management concerns for the area being considered. Early scoping discussions for this RMP included tribal leaders of the Pueblo de Cochiti. (The BLM has a Cooperative Management Agreement for the monument with the pueblo.)

Throughout the scoping process, the BLM has used various means to inform the public about the RMP/EIS and solicit input to be considered during plan development. The ongoing public

TABLE 5-1

GROUPS & AGENCIES PROVIDED A COPY OF THE RMP/EIS OR NOTIFIED OF ITS AVAILABILITY

American Indian Groups

Hopi Tribe
Jicarilla Apache Nation
Navajo Nation
Pueblo de Cochiti
Pueblo of Acoma
Pueblo of Isleta
Pueblo of Jemez
Pueblo of Laguna
Pueblo of Nambe
Pueblo of Pojoaque
Pueblo of Sandia
Pueblo of San Felipe
Pueblo of San Ildefonso
Pueblo of Santa Ana
Pueblo of Santa Clara
Pueblo of Santo Domingo
Pueblo of Tesuque
Pueblo of Zia
Pueblo of Zuni

Businesses

Bohannan Houston Inc.
Century 21 Allied
First Security Bank
Grant Co. Farm and Livestock
Hindi Livestock Co.
Huning LTD Partnership
Hunter Corp. Contractor
Star Group
The Morning Star Institute
The WYSS Foundation
Western Environmental Law Center
Wild Birds Unlimited

Interest Groups

Albuquerque Wildlife Federation
All-Indian Pueblo Council
American Indian Chamber of Commerce of NM
Amigos Bravos
Animal Protection Institute of America
Archaeological Conservancy
Audubon Society of Central NM
Center for Environmental Research
Coalition of AZ-NM Counties
Cochiti Community Development Corp.
College of Santa Fe
Commission of Wilderness Supporters
Concerned Citizens Del Norte
Conserv America
Cottonwood Gulch Foundation
Enterprise Foundation
Forest Guardians
Friends of Taos Valley
Lindrith Recreation Assoc. Inc.
Mother Whiteside Library
National Audubon Society
National Trust for Historic Preservation
National Wildlife Federation
Native Plant Society
Natural Resources Defense Council
NM Four Wheelers
NM Garden Clubs Inc.
NM Land Use Alliance
NM Mountain Club
NM Nature Conservancy
NM Northern Chapter Wilderness Watch
NM Public Interest Research Group
NM Range Improvement Task Force
NM Republicans for Environmental Protection
NM Trials Association
NM Trout
NM Volunteers for the Outdoors
NM Wilderness Alliance
NM Wilderness Coalition
NM Wilderness Study Committee

TABLE 5-1, concluded

Interest Groups, concl'd

NM Wildlife Federation
Northern NM Stockman's Association
Pentecostal Church of God
Plateau Sciences Society
Public Lands Action Network
Sandia Mtn. Wildlife Association
Santa Fe National Forest Watch
Sierra Club
Sierra Club, Albuquerque Chapter
Sierra Club, Santa Fe Group
SW Center for Biological Diversity
SW Off Road Enterprises
SW Research and Information Center
Taos Environmental Association
The Wilderness Society
Univ. of NM Getaway Adventures
Valley Improvement Association

Federal Government Agencies

Army Corps of Engineers
Bureau of Indian Affairs
    Albuquerque Area Office
    Eastern Navajo Agency
    Southern Pueblo Agency
Bureau of Reclamation
Dept. of Agriculture, Rural Development
Dept. of Housing & Urban Development
Dept. of Interior, Office of Environmental Project Review
Fish and Wildlife Service
Forest Service
    Cibola National Forest
    Coyote Ranger District
    Cuba Ranger District
    Jemez Ranger District
    Lincoln National Forest
    Mt. Taylor Ranger District
    Regional Forester, Southwest Region
    Santa Fe National Forest
Natural Resources Conservation Service
National Park Service
    Bandelier Nat'l Monument
    Director, Intermountain Region
    El Malpais Nat'l Monument
    El Morro Nat'l Monument

State Government Agencies

Governor's Office
Bureau of Geology & Mineral Resources
Bureau of Mines
Dept. of Agriculture
Dept. of Energy
Dept. of Finance & Administration
Dept. of Game & Fish
Dept. of Tourism
Dept. of Transportation
Environment Dept.
Interstate Stream Commission
Laboratory of Anthropology
NM Health & Environment
NM Museum of Natural History & Science
State Game Commission
State Historic Preservation Office
State Land Office
University of NM, Dept. of Earth & Planetary Sciences

Local Government Agencies

Bernalillo County
Cibola County
City of Albuquerque
City of Grants
City of Rio Rancho
Rio Arriba County
Sandoval County
Santa Fe County
Village of Cochiti Lake
Village of Corrales

U.S. Congress

The Honorable Jeff Bingaman
The Honorable Pete V. Domenici
The Honorable Tom Udall
The Honorable Heather Wilson

involvement process for this effort includes the following.

- Notice of Intent (NOI)—Published in the *Federal Register* (Vol. 69, No. 14; Thursday, January 22, 2004; pp. 3167-69). The notice announced the agency's intent to prepare an RMP/EIS, and included information on the public scoping meetings, newsletter, availability of information on the BLM's Website, points of contact, area description, and preliminary issues and criteria to guide plan preparation.

- Newsletter (February 4, 2004)—Mailed to about 230 individuals, organizations, and government officials who had expressed interest in the BLM's planning efforts. The newsletter invited public participation, provided information similar to that contained in the NOI, and supplied a self-addressed, postage-paid form for submitting written comments. It also suggested that comments, while important throughout the planning process, would be most helpful in the scoping process if received by March 12, 2004.

- Press Release (February 19, 2004)—Issued to 13 media points, announcing the dates, times, and locations of the public scoping meetings.

- Website (made available on January 22, 2004)—This feature provides information similar to that contained in the NOI and newsletter. The site is linked to another that offers information about the monument itself.

- Public Scoping Meetings—Held in communities near the monument on February 24th (Peña Blanca), 25th (Rio Rancho), and 26th (Santa Fe), 2004, from 6:00 to 8:00 p.m. Although no formal presentations were made nor notes kept, attendees were encouraged to write down their comments for the record. Each open house featured maps, resource information, comment forms, copies of the newsletter and Presidential Proclamation, and members of the BLM's Interdisciplinary Planning Team to provide information and answer questions. The BLM invited a representative of the Pueblo de Cochiti to attend these meetings. In addition to BLM representatives, seven individuals registered their attendance at the three meetings. One of those individuals, representing "Conserv America," attended all three meetings.

  During the public scoping period (ending March 12, 2004), the BLM received 30 submissions from interested individuals or groups. Most of the submissions contained constructive comments, including ideas for the planning team to consider in finalizing the planning criteria, and in formulating alternative ways of managing the monument to resolve resource use conflicts and define management decisions.

- Draft RMP/EIS Review (November 4, 2005-February 2, 2006)—The public has been given opportunity for involvement in the development of this Proposed RMP/Final EIS. Hard or compact disk copies of the Draft RMP/EIS were sent to a mailing list of 333 addresses, with an additional 76 copies sent to 22 federal agencies, before publication of the Environmental Protection Agency's Notice of Availability (NOA) in the *Federal Register* on November 4, 2005. The EPA notice announced a 90-day public comment period. On the same date, the BLM also published a NOA in the *Federal Register*. This notice invited comments and gave the agency's Internet address where a copy of the draft could be reviewed.

  Upon conclusion of the 90-day public comment period, the BLM reviewed and considered all comments received, and has revised the Draft RMP/EIS. The agency received 16 public comment submissions, 15 of which are published in this chapter. Agency staff members have responded to substantive comments. [Note: Receipt of the one comment not published is acknowledged for process record purposes. This comment's content is not disclosed because it draws attention to potentially important historical resources within the Planning Area. The BLM is currently evaluating this information, and will maintain its confidentiality under regulations implementing the Archaeological Resources Protection Act (43 CFR Part 7).]

- Additional Opportunity for Public Input—The Proposed RMP/Final EIS has been published, with the document's availability announced in the *Federal Register*. A 30-day protest period follows, during which any individual may submit his or her protest to the BLM. After the end of the 30-day public protest period, the BLM will evaluate and resolve any protests. When protests are resolved, the BLM New Mexico State Director will publish the approved Final RMP and Record of Decision and announce the availability of these documents in the *Federal Register*.

PREPARERS OF THE PLAN

An interdisciplinary team of BLM specialists from the BLM Albuquerque District, Rio Puerco Field Office has prepared this plan. Table 5-2 lists the names and qualifications of the team members.

TABLE 5-2

PREPARERS OF THE PLAN

Name	Assignment	Education	Related Experience [a]
John Bristol	Team Lead; Visual Resources, Wild & Scenic Rivers, Wilderness	BS—Landscape Architecture	BLM/USFS—35 years
Roger Cumpian	Vegetation	BS—Animal Science & Range	BLM—28 years
John Gilmore	Geology, Minerals, Paleontology	BS—Geology	BLM/Industry—27 years
Kent Hamilton	Planning, NEPA Coordination, Social & Economic Conditions	BS—Agricultural Economics	BLM/BIA—45 years
Pamela Herrera-Olivas	Riparian Resources	BS—Biology, MS—Environmental Science	BLM—9 years
Andy Iskra	Wildlife; Threatened, Endangered & Special-Status Species; Riparian Resources	BS—Wildlife Biology	BLM/USFS/NMFS—20 years
Debby Lucero	Lands & Realty, Access & Transportation	BS—Environmental Science	BLM/USFS/NPS—20 years
Connie Maestas	Lands & Realty, Access & Transportation	Associate of Applied Science—Paralegal Studies	BLM—25 years
David Mattern	Soil, Water, Air	BS—Forest Management, MS—Watershed Hydrology	BLM/USFS—20 years
Brett O'Haver	Vegetation, Rangeland Management	BS—Wildlife Biology	BLM/NRCS—26 years
Danny Randall	Recreation	Natural Resource Experience	BLM—26 years
Todd Richards	Woodlands; Fire Management	BS—Education	BLM/USFS—13 years
John Roney	Cultural Resources	BA—Sociology/ Anthropology, MA—Anthropology	BLM—30 years
Kathy Walter	National Landscape Conservation System Manager; Recreation	BUS—Anthropology, MA—Recreation	BLM/DOD/NPS/HCRS—30 years
M'Lee Beazley	Desktop Publishing, Printing, Photography	Certification—Graphic Design	BLM—21 years
Dawn Chavez	GIS Mapping & Analysis	BA—Geography	BLM—3 years
Greg Homan	GIS Mapping & Analysis	BA—Geography	BLM/Other—19 years
Gretchen Obenauf	Assistant Writer/Editor	BA, MA—Archeology	BLM/BIA/NPS—30 years
Sarah W. Spurrier	Writing & Editing	BA—Psychology, MBA	BLM/Industry—27 years

Note: [a] BIA—Bureau of Indian Affairs, BLM—Bureau of Land Management, DOD—Department of Defense, HRCS—Heritage Conservation & Recreation Service, NMFS—New Mexico Forestry Service, NPS—National Park Service, NRCS—Natural Resources Conservation Service, USFS—U.S. Forest Service.

PUBLIC COMMENTS AND BLM RESPONSES

The BLM received 15 comment submissions, as listed in Table 5-3 below. The submissions are reprinted in full at the end of this chapter.

The comments responded to in the text following the table (from Communications #4, 6, 7, and 11 through 15) question the adequacy of the analysis in the Draft Plan/EIS or the management measures proposed, or provide technical information to enhance the analysis. Other comments received (in Communications #1, 2, 3, 5, 8, 9 and 10) offer opinions on the document or propose management measures, but do not suggest substantive changes and therefore do not require response.

TABLE 5-3

PUBLIC COMMENT SUBMISSIONS

Sub-mission Number	Name of Commentor	Role/Entity Represented	Date Submission Received	Type of Submission
1	Wendell Harris	Self	11/19/2005	E-Mail
2	Roland E. Johnson	Governor, Pueblo of Laguna	11/21/2005	Letter
3	Janice Daigh	Self	11/23/2005	Letter
4	Tim Beckmon	Self	12/06/2005	E-Mail
5	Deborah Webster	Self	12/14/2005	E-Mail
6	Jay Reedy	Self	12/20/2005	E-Mail
7	Thomas Jervis, Ph.D.	President, New Mexico Audubon Council	12/27/05	Letter
8	Lloyd H. Woosley, Jr., P.E.	Chief, Environmental Affairs Program, U.S. Dept. of Interior, Geological Survey	12/23/2005	E-Mail
9	Rhonda M. Smith	Chief, Office of Planning & Coordination, U.S. Environmental Protection Agency, Region 6	1/30/2006	Letter
10	Monica L. Enke	Cultural Resources Specialist, Zuni Heritage & Historic Preservation Office, Zuni Tribe	1/10/2006	Letter
11	Hart R. Schwarz	Self	1/24/2006	E-Mail, followed by Letter
12	Gary A. Smith	Professor, University of New Mexico, Dept. of Earth & Planetary Sciences	1/31/2006	Letter
13	Lisa Kirkpatrick	Chief, Conservation Services Division, New Mexico Dept. of Game & Fish	2/2/2006	Letter
14	Dawn Selwyn	Acting Regional Director, U.S. Dept. of Interior, Bureau of Indian Affairs, Southwest Region	2/3/2006	Letter
15	Cippy CrazyHorse	Governor, Pueblo de Cochiti	3/7/2006	Letter

Communication #4—Tim Beckmon, Santa Fe, NM

Comment 4-A “I read that the BLM is considering purchasing the Young Ranch to include in the monument. . . . [W]ould UNM be willing to sell?”

Response 4-A Negotiations are ongoing that may eventually lead to federal ownership and BLM management of this land parcel.

Communication #6—Jay Reedy, RI (NM Property Owner)

Comment 6-A “. . . [I]ncreasing use restrictions for tourists may soon be needed. Certainly no further maintained trails should be planned . . .”

Response 6-A The BLM will monitor visitor use and resource impacts to determine when or if visitor use should be restricted, and what facility development (including trails) will support maximum visitor use while minimizing resource degradation. The BLM’s mission is, “To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.”

Communication #7—Thomas Jervis, President, NM Audubon Council, Santa Fe, NM

Comment 7-A “Equestrian [use] should be evaluated very carefully in light of the soil types present. We question whether equestrian use is appropriate within the confines of the Monument. Pets should not be allowed on trails at all and only on a leash in the developed areas.”

Response 7-A Equestrian use will be allowed, under permit, south and west of BLM Road 1011 within the Planning Area. The agency will monitor this region for soil and other resource impacts related to equestrian use. Changes in permitted use levels will be based on data from this and other monument monitoring.

Pets within the Monument currently are restricted to being on a leash at all times. Such matters can be administratively determined and do not require decisions at the Resource Management Plan level.

Comment 7-B “We believe that any active management of the Piñon-Juniper (P-J) savannah should be approached with great caution, clear and measurable goals and objectives, and only after replicable experiments that demonstrate success in meeting those objectives. In particular, cutting of dead trees should be avoided except where they represent a direct hazard. While we believe that the present state of these areas is likely to be outside of the natural range of ecological variation, we also believe that the state of understanding of these ecosystems is not mature. While experiments done on P-J restoration at Bandelier National Monument are suggestive of appropriate methods of restoration, we are concerned that at the lower and drier sites in the Monument, these methods may produce different results. Nevertheless, the example set by Bandelier in their application of scientific adaptive management to the problem of widespread erosion is commendable and we believe that a similar approach should be incorporated into the RMP. Again, any action should consider the friable nature of pumice soils and their fragility. Mechanical treatment may be necessary and desirable to achieve ecosystem goals. We believe a long-term goal of the RMP should be to restore the appropriate role of fire in the ecosystem, which will require the re-establishment of adequate grass and forb cover."

Response 7-B Study of the Planning Area (Borland, 2004) indicates that the woodland and shrubland plant communities there are outside their historical range of variability in terms of stand structure (trees per acre and crown cover), fire frequency (years between fires), and fire behavior (fire action under various weather or climatic conditions).

It is reasonable to expect that the treatments prescribed will restore and maintain the plant communities in the area to conditions within their historical range of variability by maintaining their composition, structure, and function. This would improve the ecological health of the Monument and reduce fire risk. Such modification of fuels has proven effective in changing fire behavior elsewhere.

These treatments will correct vegetation problems currently existing in the Planning Area and result in major vegetative changes needed to reach both ecological health and agency management objectives. Maintenance treatments will occur over the life of the RMP to achieve and maintain the various vegetation objectives. In addition, the treatments will include a monitoring and research component, as well as mechanisms to refine or alter planned actions based on new information. (Refer to Appendix J for detail on vegetative treatments and fire management.)

Comment 7-C "Particular attention should be paid to riparian areas and their restoration. They should be fenced if necessary to exclude livestock and visitor impact until they have recovered sufficiently to withstand visitor use. Active management to encourage re-establishment of riparian vegetation should be part of the RMP. Roads should be re-routed if necessary to remove them from the riparian zone."

Response 7-C Please refer to the discussions of riparian areas under Alternative A in Chapter 2, in Chapter 3, and in Appendix I. Currently, no areas of the Monument exhibit riparian characteristics.

Comment 7-D "A long-term plan for the control and maintained exclusion of exotic plant species should be included in the RMP."

Response 7-D Please refer Chapter 3 ("Vegetation") and Appendix B for discussions of noxious weeds. It is the goal of the BLM to prevent the introduction of noxious weeds, and to eradicate or control any populations of these weeds found on public lands.

Comment 7-E "We believe that one long-term goal of the RMP should be to re-establish the suite of native wildlife appropriate to the ecosystems of the Monument. This may include the re-introduction of some species (Bighorn Sheep perhaps) and the elimination of others (Burros, if still extant). The RMP should address the possibility that Elk may colonize the monument for winter range. Predator control and trapping of fur-bearers should not be practiced in the Monument although hunting may be necessary to control ungulate populations."

Response 7-E The BLM's goal is to provide habitat for the range of naturally occurring species on public land. The Monument has not been inventoried for the occurrence of most non-game wildlife and plant species, so any deviation from "the suite of native wildlife appropriate to the ecosystems of the Monument" is unknown. A proposed action in the plan is to conduct intensive inventories of native species to determine the need for specific species management.

No historical record or current evidence exists of feral burros on the Monument. If burros are found they will be handled as trespass livestock. (Refer to Chapter 3 under "Game Animals" for discussion of elk and bighorn sheep. Also refer to the "Wildlife" section of Chapter 2, Proposed Action, for planned actions.)

Communication #11—Hart R. Schwarz, Albuquerque, NM

Comment 11-A "I'm not sure if grazing is to be eliminated on BLM land as stated on ES-5, or if the door is left open to it as seems to be implied on 2-9. I would be in support of the former because the sandy volcanic soil is so unsuitable to grazing that I could not [foresee] any circumstances that would allow the practice for some obscure benefit. Perhaps one might revisit the possibility in fifty years, but for the present, the area sorely needs to recover."

Response 11-A The goals and objectives for the BLM's livestock grazing program are found in Chapter 2. In establishing the Monument, Proclamation 7394 states, "The Secretary of the Interior shall retire the portion of the grazing allotments within the monument, pursuant to applicable law, unless the Secretary specifically finds that livestock grazing will advance the purposes of the proclamation."

On some occasions, short-duration, non-renewable livestock grazing can be used as a tool to control non-native plant species and improve ecological conditions. The BLM will issue permits for this type of grazing in the Monument for such occasions.

Comment 11-B "The table on 3-40 mentions the Plain Titmouse, even though this bird no longer exists! It was split into two species with new common and scientific names. Our bird in New Mexico is now known as the **Juniper Titmouse**."

Response 11-B This error has been corrected.

Comment 11-C "I would leave out some birds from these lists, such as Cliff Swallow and the Blue Grosbeak (they're found down by the river, but I haven't seen them on the Monument), and even the Rufous-crowned Sparrow, which appears to be a rare bird here, as is the Canyon Towhee."

Response 11-C The Monument has not been intensively inventoried for potentially occurring bird species, so all species identified in Table 3-14 are taken from the Partners in Flight BCR 16 list and coarsely filtered for those species occurring in the habitat types that exist in the Monument (as indicated in the footnote to the table). Please refer to the Wildlife section of Chapter 2 under Alternative B for planned actions. The biota of the Monument will be inventoried.

Comment 11-D "For Common birds I would add Say's Phoebe and Chipping Sparrow, while breeding exclusively in P/J should include the Western Scrub-Jay and the Hepatic Tanager (in

P/J with Ponderosa). The Say's Phoebe would be one of the birds nesting in the cliff areas."

Response 11-D Please refer to Response 11-C.

Comment 11-E "It should probably be noted most of the birds of special conservation concern are not, or only seldom found at Tent Rocks."

Response 11-E Please refer to Response 11-C.

Comment 11-F "Perhaps one could add the comment in the EIS, saying that the BCR is reflective of a very large area and that Tent Rocks might deviate somewhat from the assumed distribution."

Response 11-F Your comment is noted. The title of Table 3-14 has been revised.

Communication #12—Gary Smith, Dept. of Earth & Planetary Sciences, Univ. of New Mexico

Comment 12-A "The University of New Mexico (UNM) has owned [the Young Ranch/Cañada de Cochiti] since acquiring it by donation from James W. Young in 1964. The title is currently in escrow as part of a land exchange between UNM and the State Land Office (SLO). The exchange will likely be completed by the middle of 2006, after which the SLO will hold the title.

"The BLM should be aware that UNM holds an Educational-Use Easement to access the Young Ranch property following completion of the land exchange. This easement runs with the land and will be binding upon any future landowner should the SLO dispose of the property by future exchange or sale. . . . I personally foresee no problem with UNM's activities on the Young Ranch property should be BLM subsequently acquire the land from the SLO and include it within the Monument. . . . I raise this comment primarily as a point of information."

Response 12-A Thank you for this information. If the BLM acquires the North Edgeholding, agency staff will work with UNM staff to ensure access for research and educational purposes.

Comment 12-B ". . . however, . . . access to the Young Ranch property for UNM teaching and research is strongly dependent on continued use of the existing dirt road that follows the west base of Peralta Canyon northward from BLM 1011 in the center of Section 33. We request that this road remain open for permitted (if not public) use regardless of whether or not BLM acquires the adjacent Young Ranch land or private land within the Monument. Private landowners within the Monument boundaries currently permit UNM groups to cross their land to reach Young Ranch and it is essential to our use that this access continues."

Response 12-B This road to which you refer in Section 33 is on private land. If the BLM acquires this private inholding, UNM's access needs will be considered as they relate to the Monument's resource values and purposes.

Comment 12-C "I am particularly concerned that two prior and/or existing uses, and their effects, be eliminated. First, cattle grazing is incompatible with the preservation aspects of the Monument's mission. Given the limited presence of grass other than invasive nonnative cheat grass, itself of poor grazing quality, it seems to me that there is little if any rationale for continuing grazing within the Monument boundaries. Cattle trample native plant species, trample and break surface archeological artifacts, and contribute to erosion in an already highly erodible landscape."

Response 12-C Please refer to Response 11-A above.

Comment 12-D "Second, most of the dirt roads and tracks within the Monument date to prior extraction of pumice, and these roads and the pumice excavations are sites of enhanced erosion by overland flow during and following heavy rainfall. I advise that abandoned pumice mines be reclaimed to reduce erosion. Former pumice-mine haul roads should also be reclaimed to halt erosion unless they serve a new purpose as trails or roads within the Monument. If used as trails or roads, I advise that measures be undertaken to reduce erosion that currently happens where overland flow is channeled along the roads."

Response 12-D Pumice areas have naturally stabilized. To try to further reclaim them could cause unnecessary and undue degradation to the sites and surrounding areas. Also, the pumice features are part of the history of the area that would provide future opportunities for interpretation.

As indicated on Map 7 (Alternative B) and Map 8 (Alternative C), trail closures and conversion of roads to trails have been identified. As stated in Chapter 2 under "Management Guidance Common to All Alternatives" for Access and Transportation, "BLM staff will determine restoration measures such as stabilization and reseeding to prevent soil erosion. Such Best Management Practices for minimizing sediment pollution will be developed and implemented on a site-specific basis." Some of the roads in the eastern portion of the Monument have been identified for use as hiking trails. Measures will be taken to reduce erosion as these roads are converted.

Comment 12-E "In addition, page3-4, Geology, Minerals, and Paleontology; Minerals does not address perlite. . . . Perlite is abundant on the primarily private land in sections 28 and 29 within the Monument boundaries. Perlite is also present on the Cañada de Cochiti tract to the north."

Response 12-E The presence of perlite has been acknowledged in Chapter 3.

Comment 12-F "Page 1-2, Natural and Cultural Resources and Uses, first paragraph: The text states that the tent rocks eroded from deposits erupted from the Valles Caldera, which is not true, and calls the caldera a crater, which is not consistent with geologic usage of the term "crater." I suggest changing the third sentence to read: *The light-colored, cone-shaped tent rock formations formed by erosion of layers of volcanic ash and stream-deposited gravel related to volcanic activity that occurred in the southern Jemez Mountains between 6 and 7 million years ago. Rhyolite lava filling one of the craters that was active at this time forms the steep canyon walls at the confluence of Peralta and Colle Canyons in the northern part of the Monument.*"

Response 12-F The text has been revised.

Comment 12-G	"Page 3-4, Geology, Minerals and Paleontology; . . . The use of the term 'Pajarito Plateau' to describe the physiography of the region differs from use by geologists [who] restrict the term . . . to the mesa and canyon area in the Los Alamos-White Rock region between the Sierra de los Valles and the Rio Grande. Certainly there are physiographic similarities between this region and the area around KKTR National Monument. However, if extending the term to the KKTR area, surely it would be much more proper to describe this as the *southwestern* edge of the Pajarito Plateau, rather than the "southeast edge," as currently stated in the document. . . ."
Response 12-G	The text has been revised to incorporate the comment.
Comment 12-H	"In the third paragraph of this section, the work 'outcrops' appears as a verb. The word 'outcrop' is a noun, so it would be grammatically . . . more correct to say that the Bandelier Tuff 'crops out' in the area . . ."
Response 12-H	This sentence has been omitted.
Comment 12-I	"The wording of this paragraph implies that Bandelier Tuff is not present in the Monument and that all deposits are assigned to the Peralta Tuff Member and the Cochiti Formation. Actually, there are substantial and geologically important outcrops of the Bandelier Tuff just north and east of the slot canyon within the Monument."
Response 12-I	The text has been revised to reflect the comment.
Comment 12-J	"It may also be worth noting that the scattered pumice deposits, partly mined in the past, resulted from the most recent eruptions within the Valles [C]aldera from the El Cajete crater, approximately 40,000 years ago."
Response 12-J	The comment is noted and has been added to the text.
Comment 12-K	"It may be worthwhile to expand this section with a paragraph that includes the geological significance of faults in the Monument . . ."
Response 12-K	The fault discussion has been expanded.
Comment 12-L	"Page 3-4, Geology, Minerals, and Paleontology; . . . last paragraph. The report attributes the formation of tents to differential erosion processes that involve the presence of welded tuff. There is no welded tuff at KKTR National Monument, so this explanation for the origin of tents is incorrect. "There are two very different types of tent rocks at the monument and they formed in different materials by different processes. . . . "1. The least common tent rocks form in light-colored volcanic tuff and within the present monument exist only in a small area near the parking area and near the head of the slot canyon (pictured on the cover of the . . . book). . . .

"2. The most common tent rocks at the Monument, by far, formed by erosion of gravel and sand layers deposited by streams. The photo that serves as the frontispiece to Chapter 1 . . . illustrates this type of tent . . ."

Response 12-L The text has been revised to incorporate this comment.

Comment 12-M "Page 2-11 and Map 5, Unique Geologic Features: I was unable to locate a definition of 'unique geologic features' in the document . . . My Oxford Dictionary gives the primary definition of 'unique' as something of 'which there is only one, unequaled.' No geologic feature at the Monument is one-of-a-kind. Tent rock formations, for example, are present in many parts of the Jemez Mountains. While Kasha Katuwe Tent Rocks does represent a unique *combination* of geologic features, visual beauty, ecological transitions, and cultural value, the geologic features themselves are not unique. Perhaps it would be better to refer to 'extraordinary geologic areas' that might then be defined as areas where geologic features are extremely well represented with high educational and aesthetic values . . ."

Response 12-M The original wording in the Draft RMP/EIS was taken from Proclamation 7394. However, in light of your comment, the term "unique geologic features" has been changed to "special geologic features" throughout the document.

[Note: The BLM appreciates the assistance of UNM Professor Gary A. Smith in clarifying the information contained in the RMP/EIS regarding the geology of the Monument and Planning Area.]

Communication #13—Lisa Kirkpatrick, New Mexico Dept. of Game & Fish

Comment 13-A "On page 9 of the *Kasha-Katuwe Tent Rocks National Monument Public Scoping Summary Report* . . . it states 'The Monument plan will recognize the State's responsibility and authority to manage wildlife, including hunting within the Monument.' Additionally, all 3 Alternatives propose to designate large areas as 'Semi-primitive Motorized' or 'Semi-primitive Non-motorized' recreational opportunity. BLM's national policies list hunting as an appropriate recreational use in these types of areas (p. E-2). Local BLM regulations prohibit hunting in KKTR, citing public safety concerns. The only mention of hunting in this EIS is the paragraph beginning on p. 4-11 which states that allowing hunting would create direct short-term and possible long-term impacts to unique geologic features.

"Sport hunting is an important form of recreation in New Mexico, with well documented economic benefits to local communities. It is also a valuable tool used by the Department to manage wildlife populations. Wildlife depredation has been an issue on private lands and reservations in the area of KKTR. The Department believes that carefully managed sport hunting could be a valid use of KKTR.

"Clearly, the use of firearms in the Areas of Concentrated Recreational Use, as depicted on Map 3 would be a public safety issue. KKTR, however contains thousands of acres of backcountry where hunting, especially archery hunting, might be an appropriate activity. This issue could become even more significant if the Canada de Cochiti is acquired as part of KKTR.

"There is no evidence provided to indicate that hunters would uniquely impact the tent rocks. Big game hunting tends to be a highly focused activity. Since the tent rocks do not represent a frequently utilized component of deer or elk habitat, hunters would not be attracted to these features at a higher rate than any other group of recreational or educational users, and would probably be less likely to impact them. Proper regulation and enforcement would have a greater likelihood of reducing this sort of impact than arbitrarily excluding an entire class of recreational user.

"The Department is committed to working with BLM to determine proper uses of the wildlife resources in KKTR, but these issues have not been thoroughly evaluated in this EIS."

Response 13-A Yes, sport hunting is an important form of recreation in New Mexico, and carefully managed sport hunting on appropriate federal lands is a valid use. The local BLM regulations to which you refer were intended to regulate the discharge of weapons because of safety concerns within a developed recreation area or within ½ mile of a developed site. In the Monument, the BLM considers as "developed areas and sites" the intensive recreational use areas where visitors congregate around the developed facilities and built structures. The agency's primary concern at the time these local rules were developed was recreational target shooting within these types of areas.

The BLM will coordinate with the New Mexico Department of Game and Fish (NMDG&F) concerning the use of modern firearms within the Monument and on acquired lands within the Planning Area. The agency's goal is to avoid putting those visitors in harm's way who are observing, studying or using resources on these lands for recreational activities other than hunting or American Indian ceremonial uses, while still providing opportunities for sport hunting. The BLM will work cooperatively with the NMDG&F to fulfill these responsibilities and to meet the requirements of the proclamation.

Comment 13-B "It is not clear exactly what the trail closures proposed under Alternative B would consist of, or what the resulting impacts would be. Would these trails simply not be marked or maintained by BLM, or would they be obliterated, rehabilitated, and posted to prohibit public access? Most of the existing impacts (soil compaction, erosion, and habitat destruction) recently observed on some of these trails was the result of continued livestock grazing, not human use. Closing these areas to public access would significantly reduce the recreational and educational opportunities for which the Monument was established."

Response 13-B Trails are closed for different purposes, so closures are implemented in different ways. Trails closed to reduce trespass on private lands will be signed as "closed" initially. If the private lands or easements were acquired, these trails may be reopened and become part of the permanent monument trail system, depending on their condition and location. Trails closed for resource protection or safety reasons will most likely be made inaccessible, and depending on their condition, may be allowed to rehabilitate naturally. If natural rehabilitation is not probable, mechanical rehabilitation could be done using methods that will avoid or reduce erosion, resource degradation and destruction.

Although recreation and education are allowable uses of the Monument, Proclamation 7394 reserved these lands to protect their geologic, cultural and biological features. The BLM must weigh the impacts of recreation and other uses against this mandate to protect the Monument's special resources.

Communication #14—Dawn Selwyn, Acting Regional Director, Bureau of Indian Affairs, Southwest Region

Comment 14-A “Environmental Justice was mentioned in the Draft RMP/EIS, we recommend that this section be further analyzed for each alternative, considering that the KKTR is near minority and low income populations and proposed actions may impact these populations.”

Response 14-A Analyzing environmental justice involves two elements: (1) consultation, providing members of low-income and minority populations with the opportunity to participate in the planning process; and (2) assessing the potential for a disproportionate distribution of impacts on such groups. The first element, consultation and the opportunity to participate in the planning process, has been offered to minority and low-income populations for all the alternatives addressed in the RMP/EIS.

In some instances, the distribution of impacts would change depending on the alternative selected for implementation. For instance, areas in which American Indian uses and traditional cultural practices take place, while not specifically identified in the plan, will be impacted by monument visitor use under any alternative. However, the intensity of impact will likely be higher under the alternatives allowing higher numbers of visitors. On the other hand, higher visitor use will increase visitor use fees, which are a source of revenue and employment for the Pueblo de Cochiti through its Cooperative Management Agreement with the BLM.

Therefore, the loss of quality for American Indian traditional uses and the employment and income related to monument use are disproportionately borne by the Cochitis as a cooperating minority. These impacts are not specifically quantifiable but relate to potential visitor use as estimated by alternative.

Comment 14-B “It is mentioned in the Draft RMP/EIS that Fire Management will conform to the Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas. Is there an accompanying environmental assessment (EA) for this document and if so, please elaborate on the types of treatments and equipment that would be considered for KKTR. Also, have treatments, such as fuel breaks been considered for the boundaries of the KKTR to reduce the risk of wildfire spread to adjacent Indian, private, and US Forest Service lands?”

Response 14-B The *Fire and Fuels Management RMP Amendment* is combined with an EA in a single document that is available for reference at the BLM Albuquerque District Office. Refer also to Response 7-B above, and to Appendices C and J for more information on treatments and Best Management Practices.

Comment 14-C “If Alternative A is chosen, when would the Rio Puerco Resource Management Plan, 1992 and Final Protection Plan for Tent Rock, An Area of Critical Environmental Concern, 1987 [be] updated to address management decisions for the KKTR?”

Response 14-C If Alternative A is chosen, the management decisions specified in this current document would become the RMP for the Monument and Planning Area. The BLM can amend the RMP as changes are needed. The expected life of these plans, without major changes, is 15 to 20 years.

Comment 14-D “Under Alternative B, it is mentioned that new visitor facilities will be built to protect resources, how will these structures protect resources and will a site specific EA be prepared for the proposed facilities?”

Response 14-D Facility developments (which do not always involve building a structure) are designed to minimize resource damage or stop it from occurring. Examples are: (1) installing a designated parking area to prevent visitors from driving along trails or damaging vegetation, (2) relocating a trail to decrease erosion, prevent resource damage, and minimizing maintenance costs, and (3) installing toilets and trash receptacles to prevent litter and stop human waste from being scattered throughout the Monument. The NEPA analysis done in this EIS should meet EA requirements, except for the site-specific analysis required for cultural resources, threatened or endangered species, and American Indian consultation.

Comment 14-E “Also, under this alternative [B], drinking water would be provided by BLM. Will the Final RMP/EIS determine which of the options will be pursued for attaining drinkable water for visitors? Will proposed facilities comply with the Safe Drinking Water Act?”

Response 14-E While the source has not yet been determined, the BLM intends to have adequate and safe water drinking available for visitor use in or near the Monument.

Comment 14-F “Under Alternative C, the possibility of opening an additional eastern access route would not require NEPA analysis, why?”

Response 14-F Refer to Response 14-D above.

Comment 14-G “Have cultural resources been identified within this proposed new access?”

Response 14-G Any new road construction will require Class III (intensive) cultural resources inventory, regardless of whether or not NEPA analysis is required. Existing cultural resources information suggests that cultural resources are present in this area, but not in densities that would preclude development of a new access route.

Comment 14-H “Herbicide use is mentioned along the Peralta Canyon stream. Will herbicides be applied by a licensed applicator? What percent of the shrubs to be treated are exotic species?”

Response 14-H All herbicide applications will be conducted by licensed applicators. With the exception of cheatgrass, very few exotic plant species currently occur on the Monument. A few isolated saltcedars grow within Peralta Canyon and on some of the old pumice mines. Recently a small population of exotic thistles was discovered growing on the Southwest Acquisition. As a percentage, these exotic species constitute much less than 1 percent of the Monument’s plant community.

Comment 14-I “Under Alternative A, Fire Management/Ecosystem Restoration, **Impacts from Recreational Uses**, will the public be educated on fire use in the monument boundaries? Will recreation areas or new facilities include fire pits or barbecue grills for public use?"

Response 14-I No fire pits or barbecue grills for public use are planned within the existing monument boundary. Open fire use will continue to be prohibited within the Monument. As needed, the BLM fire staff will issue fire restrictions that will apply to fireworks, smoking, fire pits, barbecue grills or other means of open fires and cooking associated with picnicking and camping. Public education will include information on these restrictions, which will be posted accordingly on kiosks, bulletin boards and flyers in the Monument. In addition, the agency will distribute educational information to permitted tour groups before entry through the Internet website, brochures, or mailings, and through BLM/Cochiti personnel at the Pueblo de Cochiti Visitor Center, fee booth or patrolling the area.

Comment 14-J "[Under Alternative A, Fire Management/Ecosystem Restoration,] **Impacts from Vegetation and Woodland Management**, will slash created be pile or broadcast burned to prevent the spread of the bark beetle to healthy trees?"

Response 14-J The *Ips* beetle population could increase whenever fresh, recently cut or downed stems or large branches of pine trees (greater than 3 inches in diameter) are available for the beetles to breed in (brood material). The treatments within the Monument will be designed to reduce the suitability of the downed tree material as a breeding site for *Ips*.

Debris and slash greater than 3 inches in diameter will be removed from the site. The remaining slash will be lopped and scattered (as opposed to piled) to promote rapid drying. The purpose of lopping and scattering is to subject the brood material to maximum solar radiation, which heats the slash and promotes drying, both of which discourage beetle colonization (Owen, 2004).

References

Owen, Donald R. 2004. "*Ips* Beetles in California Pines." *Tree Notes*, CDF, No. 28.
Cranshaw W. & Leatherman D.A. 2004. *Ips* Beetles, CSU Cooperative Extension—Horticulture, No 5.558.

Comment 14-K "Under Alternative A, Visual Resources, **Impacts from Livestock Grazing**, can any of the range improvements be utilized for wildlife uses?"

Response 14-K Yes, existing livestock waters benefit a variety of wildlife species and will be left in place. Water wells located on lands proposed for acquisition or that have been acquired may also be used to provide water for the Monument's wildlife.

Comment 14-L "If range improvements are removed, will the BLM reseed the disturbed areas or will the areas be left to natural succession? Thereby, increasing the chance of noxious weed establishment."

Response 14-L The BLM may reseed disturbed areas if it appears the likelihood of natural revegetation is poor. Areas where the soil has become compacted may be ripped and reseeded. These areas will be monitored and restored as needed to minimize the chance of noxious weeds becoming established or spreading.

Comment 14-M "[Under Alternative A, Visual Resources,] **Impacts from Recreational Uses**, are all actions within this RMP/EIS considered low-level? For high level actions, will a site specific EA be required?"

Response 14-M Under Alternative A, Visual Resource Management (VRM) Class II would be assigned to all of the Planning Area. The management objective for VRM Class II is to " . . . retain the existing character of the landscape. The level of change to characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must mimic the basic elements of form, line, color and texture found in the predominant natural features of the characteristic landscape." Under Alternative B, VRM Class III would be assigned to some acreage within the Planning Area (refer to Map 15 to see these areas, and to Appendix D for the management objective for VRM Class III).

All levels of action are analyzed in this NEPA assessment. As required, the BLM will do consultation on American Indian traditional uses, perform Class III (intensive) cultural resources inventory, and complete threatened or endangered species surveys wherever new site-specific management actions are proposed.

Comment 14-N "Cumulative Impacts Under Alternative A, **Issue 1: Land Tenure Adjustment**, will there be a Cooperative Management Agreement (CMA) between BLM and the Pueblo of Santo Domingo, since 6400 acres of the original Tent Rocks Special Management Area was awarded to them? **Issue 2: Ecosystem Restoration**, will CMAs be established between the BLM and other federal agencies for vegetative treatments, due to the locality to adjacent trust lands?"

Response 14-N The BLM has no intent to develop a CMA with Santo Domingo Pueblo for the 6,400 acres transferred, which do not relate to this RMP. Neither are CMAs for vegetative treatments with other agencies proposed in this document.

Communication #15—Cippy Crazyhorse, Governor, Pueblo de Cochiti

Comment 15-A "[Our preference is] Preferred Alternative B with emphasis on road and trail closures on the Northeast section of Tent Rocks."

Response 15-A Your comments are appreciated. The BLM will consider them in selecting the Preferred Alternative and making the planning decisions.

Comment 15-B "Traditional uses and cultural resources. Everywhere noted American Indian should include (Cochiti Pueblo). Protection of the Pueblo's interest is part of the reason the monument was created and also consultations might take some time and to adjust its timeframes and to act accordingly."

Response 15-B The BLM certainly recognizes that the Pueblo de Cochiti has special ties to the monument lands. Throughout the document, references to American Indians should be understood as especially including Cochiti Pueblo. At the same time, because of federal laws, regulations and policy, the BLM must consider the potential interests of other tribes as well. The agency understands that coordination regarding traditional uses and cultural resources may take some time, and is prepared to adjust timeframes accordingly.

Comment 15-C "Are there plans with respect to the accommodations of traditional Cochiti Pueblo uses of the land and [its] cultural resources within the national monument? These uses are protected by presidential proclamation creating the monument and Cooperative Agreement between Cochiti Pueblo and BLM."

Response 15-C The alternatives were developed allowing for differences in Cochiti traditional and cultural resource use areas as they have been discussed with BLM staff in meetings to develop cooperative agreements. The Preferred Alternative was developed to maximize protection of areas indicated as having high traditional and cultural resource use values.

Comment 15-D "Wild Life Habitat. Does the monument diminish the authority of the New Mexico Game and Fish Department over wildlife? Will hunting conflict with other recreational uses and traditional uses that the Pueblo might have within the national monument or within the Canada de Cochiti grant? Can't the Pueblo have special permission for traditional society big game hunts? This issue with the Pueblo has been a [losing] cause it has reflected or affected our songs, dances, and language which is part of our way of life because of the hunting regulations set by the New Mexico game and fish department."

Response 15-D The BLM is concerned with the safety of the Monument's recreational users and American Indian traditional-use practitioners. The proclamation establishing the Monument recognized the responsibilities of the New Mexico Department of Game and Fish (NMDG&F) to manage wildlife there. The BLM will consult with the NMDG&F in establishing regulations regarding hunting and use of sporting arms, and their interface with public safety, administration, and ceremonial uses. Continuing cooperation between the two agencies regarding wildlife management, habitat and monitoring, and matters concerning public safety because of recreational and ceremonial use in the Monument will benefit both agencies into the future.

The BLM will follow administrative procedures in closing federal lands within the Monument to recreational target shooting or other nonhunting recreational shooting with dangerous weapons. These are considered to be (but are not limited to): rifles, pistols, shotguns, muzzleloaders, air guns, paint ball guns, bows and arrows, crossbows, slingshots, or any device that propels a projectile.

Comment 15-E "Transportation With reference to the EIS. There was no discussion about the impact on the Pueblo as being the gateway to the monument and Jemez Mountains, with 50,000 or more visitors to the area how does it affect public safety the environment and the roads. [T]he transportation issue includes State Road 22, 16 and Tribal road 92? In conjunction with the [C]orps of [E]ngineers operations, need to analyze jurisdictional and public safety issues. How does this affect the State, county, BIA and tribal enforcement?"

Response 15-E Roads and transportation issues have been addressed primarily within the Monument. The concept of the Pueblo de Cochiti as the "gateway community" to the Monument is not a part of the RMP decision-making process, but arises from the community's geographic location along the primary public access route. This concept has been acknowledged under each alternative in the recognition that the Pueblo Governor is able to close this access at times to avoid conflict with traditional pueblo activities.

Nor are jurisdictional issues part of the BLM's RMP decision-making process. Jurisdiction has been established for each administrative area, and some cross-jurisdictional authorities have been established by agency agreement.

Traffic safety is an RMP issue as it relates to the designation of open roads within the Monument. Using 2004 traffic count data, the BLM estimates that visitor traffic contributed approximately 2.4 percent to the average daily traffic on State Road #22 at its junction with the road to Cochiti Pueblo. The traffic on Tribal Road #92, which crosses pueblo land, is largely monument visitor traffic. Law enforcement jurisdiction on these roads is shared by the New Mexico State Police, the Sandoval County Sheriff's Office, and the BIA by agreement; it also depends on the type of incident.

Where BLM Road 1011 crosses public land in the Monument, the BLM has federal law enforcement authority, and state law enforcement authority delegated by specific agreement with Sandoval County. Where the road continues onto U.S. Forest Service land, the BLM has cross-delegation authority to enforce federal law on behalf of the Forest Service.

Comment 15-F "With respect to our cooperative agreement, the Pueblo should be entitled to a place on the signature page that it concurs with the EIS/Management plans."

Response 15-F This has been handled as a cooperative matter in both the Draft RMP/EIS and the Proposed RMP/Final EIS. It is not a planning decision matter.

Comment 15-G "The document lacks and minimizes Cochiti's relationship to BLM and the Monument area and doesn't recognize Cochiti as a Government Entity, but as merely as one of the Indian groups."

Response 15-G While this is not an RMP decision process concern, mention was made of Pueblo de Cochiti's involvement no less than 30 times throughout the document's five chapters. Several of these references are to the conditions of the Cooperative Agreements, as well as the intergovernmental agreement, conditions of the proclamation, and other Pueblo de Cochiti interests.

Comment 15-H "Other issues not addressed. Dog problem, and aircraft in the area, and its affects on Cochiti Pueblo and Tent Rocks Area."

Response 15-H The dog problems can be handled administratively and do not require RMP-level decisions.

For sightseeing, photography or filming purposes, administrative needs, or general and commercial aviation and military exercises, aircraft flights in the airspace over the Monument and adjacent lands can adversely affect the natural sounds of the Monument. The BLM's desired condition is for visitors to be able to experience solitude and natural quiet within the Monument.

Because the nation's airspace is managed by the Federal Aviation Administration, the BLM will work with that agency, the Department of Defense and other agencies. This cooperation will be aimed at ensuring that the authorized aviation activities affecting the Planning Area are done in a safe and appropriate manner, with minimal noise and other impacts on resource values, uses, and visitors' experiences. The BLM will work with commercial air tour companies to determine if the tours are appropriate and, if so, under what conditions. Aircraft landings, except for administrative and emergency purposes (e.g., fire, law enforcement, search and rescue), will not be authorized.

"Wendell Harris"
<wwvvhh@worldnet.att.net>
11/19/2005 11:37 AM

To <NM_Comments@nm.blm.gov>
cc
Subject Comments on Kasha-Katuwe Tent Rocks National Monument DRMP/EIS

I am a frequent visitor to the Tent Rocks Monument, and often take visitors from other states to the Monument. After reader all the materials provided through the internet, I believe alternative C would give the best protection to the area while allowing for reasonable public use.

Wendell Harris

PUEBLO OF LAGUNA
P.O. BOX 194
LAGUNA, NEW MEXICO 87026

Office of:
The Governor
The Secretary
The Treasurer

(505) 552-6598
(505) 552-6654
(505) 552-6655

November 17, 2005

Kasha-Katuwe Tent Rocks National Monument
Draft RMP/EIS
BLM Rio Puerco Field Office
435 Montano Road NE
Albuquerque, NM 87107-4935

Dear Mr. Singleton:

RE: 1600 (100)

The Pueblo of Laguna appreciates your consideration of possible interest your project may have on traditional religious or cultural properties.
At this time Laguna Pueblo has determined that the proposed undertaking WILL NOT have an affect at this time, but in the event that any items are recovered we would like to be notified to review items.

Sincerely,

Roland E. Johnson, Governor
Pueblo of Laguna

November 20, 2005

BLM
Draft RMP/EIS
BLM Rio Puerco Field Office
435 Montano Rd. NE
Albuquerque, NM 87107-4935

Dear Sirs:

I have studied the comprehensive draft plan for the Kasha-Katuwe Tent Rocks National Monument and have been enriched by a great deal of carefully researched information as a result. The three alternatives under consideration seem to be balanced and I have no comments as to any errors or misinformation on your part, nor do I have any additional information to add.

Therefore my comments are limited to stating my preference for Plan C. As a hiker I welcome any additional trails and am willing to allow a reasonable number of miles available for motorized access, especially on designated roads. The limitation on the number of future visitors under Plans B and C is admirable, as are other proposals that would benefit wildlife, improve watershed management, and remove sensitive areas of religious importance to the Cochiti tribe.

I have hiked at the monument over the last two decades and introduced it to guests more than once. It is a delicate treasure, and not to be spoiled by overuse by the public or by an overabundance of "improvements" that often detract from the original natural state of a beautiful area. I am pleased that the management plans have included some helpful educational displays and basic conveniences such as drinking water and more picnic areas if needed, but have not gone beyond that.

Yours truly,

Janice Daigh

Janice Daigh
300 Morningstar Lane
P.O. Box 2125
Corrales, NM 87048

"Tim Beckmon"
<TBeckmon@SkiesRBlue.com>
12/06/2005 06:13 AM

To <NM_Comments@nm.blm.gov>
cc
Subject Comments on Kasha-Katuwe Tent Rocks National Monument DRMP/EIS

I read that the BLM is considering purchasing the Young Ranch to include in the monument. First, I think this is an excellent idea and support it completely. Secondly, would UNM be willing to sell?

Tim

Tim Beckmon

70 Camino Vista Grande

Santa Fe, NM 87508

505-471-3643

"Webster, Deborah"
<dwebster@enterprisecommunity.org>
12/14/2005 01:15 PM

To "Kathy Walter \(E-mail\)" <kathy_walter@blm.gov>
cc
Subject Public Meeting Kasha Katuwe

Ms. Walter:

I attended the Kasha Katuwe Tent Rocks Environmental Impact Statement meeting in Albuquerque on December 13, 2005.

The access options and entrance proposed for the national monument appear to be consistent with the tribes' recent development concept for the Kasha Katuwe Tent Rocks Visitors Center, the gateway facility for the monument.

As you know the tribe has untaken a comprehensive planning and feasibility project to design the visitor's center that will house federal and tribal agency education programs and provide other tourism and economic development opportunities.

Deborah

Jay Reedy
<jreedy@bryant.edu>
12/20/2005 01:28 PM

To NM_Comments@nm.blm.gov
cc jreedy@bryant.edu
Subject Comments on Kasha-Katuwe Tent Rocks National Monument DRMP/EIS

I believe that management of this Monument must proceed with great caution. Since it will potentially impact Cochiti that community in particular needs to have a big say in any future plans. The closeness of this area to the Interstate could make it very popular once it becomes better known. Such popularity could quickly "love to death" the delicate rock and land formations that are the essence of this Monument. Therefore, increasing use restrictions for tourists may soon be needed. Certainly no further maintained trails should be planned in my view. Jay Reedy (resident of RI but property owner in NM as well).

New Mexico Audubon Council

Representing Four Local Chapters of the National Audubon Society in New Mexico
Conserving and restoring natural ecosystems, focusing on birds, other wildlife, and their habitats for the benefit of humanity and the earth's biological diversity

December 21, 2005

Kasha-Katuwe Tent Rocks National Monument
Draft RMP/EIS
BLM Rio Puerco Field Office
435 Montaño Road NE
Albuquerque, NM 87107-4935

The New Mexico Audubon Council represents the conservation concerns of over 4,000 members of the Audubon Society in New Mexico. We are concerned about the wise management of the public's wildlife and habitat, resources that belong to all of us. We support biologically-based management of the state's wildlife and habitat and oppose actions that threaten the sustainable management of that habitat.

We note that several issues have been identified in the scoping process for the Resource Management Plan and Environmental Impact Statement (RMP) that relate to wildlife and habitat conservation in the Kasha-Katuwe Tent Rocks National Monument (the Monument) and would like to comment further on these issues.

Transportation Management: We are in favor of closing as many roads as possible, consistent with reasonable access by the public. Roads fragment wildlife habitat and disturb wildlife movement and resting areas. We believe that mechanical and motorized vehicles should be restricted to the Monument's roads—no trail use of any wheeled vehicle should be allowed as this use exacerbates wildlife disturbance and further fragments habitat. Trails should be carefully designed and constructed in recognition of the extremely friable soils in the Monument so that erosion is minimized. This concern is not intended to discourage the provision of appropriate accessible trails. Equestrian use should be evaluated very carefully in light of the soil types present. We question whether equestrian use is appropriate within the confines of the Monument. Pets should not be allowed on trails at all and only on a leash in the developed areas.

Ecosystem/Habitat Restoration: We believe that the primary goal of management of the Monument's resources should be to restore the area to conditions that represent the natural, pre-European historical range of ecosystem variation. We are in favor of the retirement of all livestock grazing within the Monument because of the significant and detrimental effects of livestock grazing on fragile ecosystems, particularly riparian areas. We encourage the active consideration of acquisition of private inholdings at the earliest opportunity and, absent that acquisition, the fencing of Monument assets, particularly riparian areas, to protect them. We support the consolidation of property within the Monument under BLM management through exchanges with the State Land Office.

We believe that any active management of the Piñon-Juniper (P-J) savannah should be approached with great caution, clear and measurable goals and objectives, and only after replicable experiments that demonstrate success in meeting those objectives. In particular, cutting of dead trees should be avoided except where they represent a direct hazard. While we believe that the present state of these areas is likely to be outside of the natural range of ecological variation, we also believe that the state of understanding of these ecosystems is not mature. While experiments done on P-J restoration at Bandelier National Monument are suggestive of appropriate methods of restoration, we are concerned that at the lower and drier sites in the Monument, these methods may produce different results. Nevertheless, the example set by Bandelier in their application of scientific adaptive management to the problem of widespread erosion is commendable and we believe that a similar approach should be incorporated into the RMP. Again, any action should consider the friable nature of pumice soils and their fragility. Mechanical treatment may be necessary and desirable to achieve ecosystem goals. We believe a long-term goal of the RMP should be to restore the appropriate role of fire in the ecosystem, which will require the re-establishment of adequate grass and forb cover.

Particular attention should be paid to riparian areas and their restoration. They should be fenced if necessary to exclude livestock and visitor impact until they have recovered sufficiently to withstand visitor use. Active management to encourage re-establishment of riparian vegetation should be part of the RMP. Roads should be re-routed if necessary to remove them from the riparian zone. A long-term plan for the control and maintained exclusion of exotic plant species should be included in the RMP.

Wildlife Management: We believe that one long-term goal of the RMP should be to re-establish the suite of native wildlife appropriate to the ecosystems of the Monument. This may include the re-introduction of some species (Bighorn Sheep perhaps) and the elimination of others (Burros, if still extant). The RMP should address the possibility that Elk may colonize the monument for winter range. Predator control and trapping of fur-bearers should not be practiced in the Monument although hunting may be necessary to control ungulate populations.

We appreciate the opportunity to comment on this action and look forward to reviewing the completed RMP.

Sincerely,

Thomas Jervis, Ph.D., President
109 Daybreak
Santa Fe, NM 87507

p.s. PLEASE NOTE CHANGE OF ADDRESS

United States Department of the Interior

U. S. GEOLOGICAL SURVEY
Reston, VA 20192

1600 (100)

December 23, 2005

Edwin J. Singleton, District Manager
Bureau of Land Management
Rio Puerco Field Office
435 Montano Road NE
Albuquerque, NM 87107-4935

RE: Review of a Draft Resource Management Plan Environmental Impact Statement for the Kasha-Katuwe Tent Rocks National Monument

Dear Mr. Singleton:

The U.S. Geological Survey has reviewed the draft resource management plan environmental impact statement and has no comments.

Sincerely,

/Signed/
Lloyd H. Woosley, Jr., P.E.
Chief, Environmental Affairs Program

Cc: EAP Chron, MS 423
USGS:WRD:LWOOSLEY:bjjohnso:x6832:12/23/05

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS, TX 75202-2733

December 30, 2005

Mr. John Bristol
KKTR NM RMP Team Manager
Bureau of Land Management
435 Montano Road NE
Albuquerque, NM 87107-4935

Dear Mr. Bristol:

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA, the U.S. Environmental Protection Agency (EPA) Region 6 office in Dallas, Texas, has completed its review of the Draft Environmental Impact Statement (DEIS) for the proposed Kasha-Katuwe Tent Rocks National Monument and Resource Management Plan, New Mexico.

EPA rates the DEIS as "**LO,**" i.e., EPA has "**Lack of Objections** " to the proposed action as described in the DEIS. Our classification will be published in the Federal Register according to our responsibility under Section 309 of the Clean Air Act to inform the public of our views on proposed Federal actions. If you have any questions, please contact Michael Jansky of my staff at 214-665-7451 or by e-mail at jansky.michael@epa.gov.

EPA appreciates the opportunity to review the DEIS. Please send our office two copies of the FEIS when it is sent to the Office of Federal Activities, EPA (Mail Code 2252A), Ariel Rios Building, 1200 Pennsylvania Ave, N.W., Washington, D.C. 20460.

Sincerely yours,

Michael P. Jansky

for Rhonda M.. Smith, Chief
Office of Planning and
Coordination (6EN-XP)

Internet Address (URL) - http://www.epa.gov/earth1r6/
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Councilwoman

EDWARD W. WEMYTEWA
Councilman

JOSEPH C. PEYNETSA
Councilman

WILLIAM TSIKEWA, SR.
Councilman

January 6, 2005

Kasha-Katuwe Tent Rocks National Monument
Draft RMP/EIS
BLM Rio Puerco Field Office
435 Montano Road NE
Albuquerque, NM 87107-4935

To Whom It May Concern:

Pursuant to your request dated November, 2005, the Zuni Heritage and Historic Preservation Office (ZHHPO) provides the following information with regards the cultural properties. At this time the Zuni Heritage and Historic Preservation Office hopes that the most protection possible is afforded to the cultural resources that will potentially be affected by this undertaking. Please keep our office up to date on the status of the project.

On behalf of the Zuni Tribe and the Pueblo of Zuni, we thank you for providing an opportunity to comment on the undertaking. Should you require additional information, please call 505-782-4814.

Sincerely,

Monica Enke

Monica L. Enke
Cultural Resources Specialist, ZHHPO

January 21, 2006

Comments to BLM re Kasha-Katuwe Tent Rocks NM Draft EIS:

From Hart R. Schwarz
317 Palomas Drive NE, #9
Albuquerque, NM 87108

My comments primarily center on the pages that discuss the avifauna of Tent Rocks, since I have spent considerable time in the "Areas of Concentrated Recreational Use" while doing my research for the recently published beginner's annotated and illustrated bird checklist. But first I would like to make a few general observations, even though I haven't really picked an Alternative.

Grazing: I'm not sure if grazing is to be eliminated on BLM land as stated on ES-5, or if the door is left open to it as seems to be implied on 2-9. I would be in support of the former because the sandy volcanic soil is so unsuitable to grazing that I could not foresee any circumstances that would allow the practice for some obscure benefit. Perhaps one might revisit the possibility in fifty years, but for the present, the area sorely needs to recover.

Purchase of Private Lands: Tents Rocks needs to acquire the 757 acres lying between the two parking areas, as well as the much larger tract of Canada de Cochiti. Now that the site has become a National Monument, the number of visitors has increased to such an extent that more elbowroom is needed. The place suffers from extreme overcrowding, especially on weekends, and thus would benefit greatly from more dispersal opportunities.

Roads and Trails: I notice that in Alternative A many roads in the eastern part of Tent Rocks are open. Without knowing this country, it's difficult to say whether that is a good idea, but my first instinct is to opt for this opportunity of access—but with the caveat that these roads be closed in wet winters and spring, as well as the monsoons.

The Birds: I suspect that what is said about the birds on 3-39ff is primarily based on hypothetical lists such as the one from the Southern Rockies BCR, but such lists are a slippery slope at best that need to be "ground-truthed." As luck would have it, I have spent a couple of years exploring the bird life there and with that experience will venture several suggestions that touch on some essential points, without attempting to start from scratch. In other words, I'm only advancing a few cosmetic fixes.

- The table on 3-40 mentions the Plain Titmouse, even though this bird no longer exists! It was split into two species with new common and scientific names. Our bird in New Mexico is now known as the **Juniper Titmouse.** No one will even find the Plain Titmouse in bird guides anymore, except the outdated ones.
- I would leave out some birds from these lists, such as Cliff Swallow and the Blue Grosbeak (they're found down by the river, but I haven't seen them on the Monument), and even the Rufous-crowned Sparrow, which appears to be a rare bird here, as is the Canyon Towhee.
- For Common birds I would add Say's Phoebe and Chipping Sparrow, while breeding exclusively in P/J should include the Western Scrub-Jay and the Hepatic Tanager (in P/J with Ponderosa).The Say's Phoebe would be one of the birds nesting in the cliff areas.
- It should probably be noted most of the birds of special conservation concern are not, or only seldom found at Tent Rocks.

Now that I'm looking at these lists again, perhaps it would be better just to leave them alone and not fiddle with all the inaccuracies, unless one does a complete overhaul. Perhaps one could add the comment in the EIS, saying that the BCR is reflective of a very large area and that Tent Rocks might deviate somewhat from the assumed distribution.

However, Plain Titmouse must be changed to Juniper Titmouse!

I appreciate your having contacted me for comments, and only regret that I haven't been as thorough as I might have been, since the amount of information in the document is almost overwhelming.

Sincerely, Hart R. Schwarz

Hart R Schwarz

The University of New Mexico

Department of Earth and Planetary Sciences
Northrop Hall
Albuquerque, NM 87131-1116 U.S.A.
Telephone (505) 277-4204
FAX (505) 277-8843

Kasha-Katuwe Tent Rocks National Monument
Draft RMP/EIS
BLM Rio Puerco Field Office
435 Montano Road NE
Albuquerque, NM 87107-4935

I appreciate having the opportunity to review the RMP/EIS document for Kasha-Katuwe Tent Rocks National Monument and for the invitation to discuss the document contents with BLM staff at the December 2005 open house in Albuquerque. The Draft RMP/EIS document clearly represents careful acquisition of information and thought about alternative plans for developing the Monument. My comments on the document relate to my three roles involving use of the site: (1) My experience as a geological researcher who has studied the geology of the Monument area for 18 years; (2) as a geological educator who leads 1-3 field trips each year to the Monument for groups with very diverse backgrounds; and (3) my chairmanship of the Arts and Sciences Committee on Academic Use of University Properties at the University of New Mexico, pursuant to interest in the adjacent Cañada de Cochiti land (Young Ranch) within the Planning Area.

Comments regarding impact on or acquisition of part or all of Young Ranch: The draft plan appropriately highlights that the adjacent Young Ranch property shares many of the same values as the land currently within the Monument and could be effectively managed with the Monument if acquired by the BLM in the future. The University of New Mexico (UNM) has owned this land since acquiring it by donation from James W. Young in 1964. The title is currently in escrow as part of a land exchange between UNM and the State Land Office (SLO). The exchange will likely be completed by the middle of 2006, after which the SLO will hold the title. The BLM should be aware that UNM holds an Educational-Use Easement to access the Young Ranch property following completion of the land exchange. This easement runs with the land and will be binding upon any future landowner should the SLO dispose of the property by future exchange or sale. The easement specifies the instructional and research activities permitted by UNM faculty and faculty-supervised students, and permits UNM to continue using the property for essential academic purposes into the foreseeable future. I personally foresee no problem with UNM's activities on the Young Ranch property should the BLM subsequently acquire the land from the SLO and include it within the Monument. I am confident that

UNM and BLM would function as willing and cooperative partners under the easement provisions. I raise this comment primarily as a point of information.

I also desire to point out, however, that access to the Young Ranch property for UNM teaching and research is strongly dependent on continued use of the existing dirt road that follows the west base of Peralta Canyon northward from BLM 1011 in the center of Section 33. We request that this road remain open for permitted (if not public) use regardless of whether or not BLM acquires the adjacent Young Ranch land or private land within the Monument. Private landowners within the Monument boundaries currently permit UNM groups to cross their land to reach Young Ranch and it is essential to our use that this access continues.

I also request that UNM academic departments, especially Earth and Planetary Sciences and Anthropology (archaeology) be consulted regarding any activities that may take place on Young Ranch land following possible future acquisition by the BLM. These activities of mutual interest and concern would include, but not exclusively, road and trail construction, removal of nonnative plants, and removal of wildfire fuel. Cooperation in planning such activities will help to guarantee limited disruption to UNM's instructional and research endeavors. The potential construction of an access road across the current Young Ranch land (Alternative C) would be of particular concern to UNM faculty.

Comments on the draft plan: The RMP/EIS document adequately details the alternative plans for the Monument's future. I am particularly concerned that two prior and/or existing uses, and their effects, be eliminated.

First, cattle grazing is incompatible with the preservation aspects of the Monument's mission. Given the limited presence of grass other than invasive nonnative cheat grass, itself of poor grazing quality, it seems to me that there is little if any rationale for continuing grazing within the Monument boundaries. Cattle trample native plant species, trample and break surface archeological artifacts, and contribute to erosion in an already highly erodible landscape.

Second, most of the dirt roads and tracks within the Monument date to prior extraction of pumice, and these roads and the pumice excavations are sites of enhanced erosion by overland flow during and following heavy rainfall. I advise that abandoned pumice mines be reclaimed to reduce erosion. Former pumice-mine-haul roads should also be reclaimed to halt erosion unless they serve a new purpose as trails or roads within the Monument. If used as trails or roads, I advise that measures be undertaken to reduce erosion that currently happens where overland flow is channeled along the roads.

In addition, page 3-4, Geology, Minerals, and Paleontology; Minerals does not address perlite: There are perlite resources within the Monument although I do not know if there is a history of claims on these resources. It may or may not be essential for the BLM to evaluate the perlite resource. Perlite is abundant on the primarily private land in sections 28 and 29 within the Monument boundaries. Perlite is also present on the Cañada de Cochiti tract to the north.

Comments on descriptions of geologic features: My remaining comments relate to geological content within the Draft RMP/EIS. There are a number of places where geological facts are presented with errors. In other places the discussion seems to me incomplete for a document that may well be commonly cited in the future, by both BLM staff and the public, as a source of information on the geology of the Monument. These comments, though extensive, do not affect the quality or outcomes of the plans that are presented for Monument development. In that light, you may find them nonessential to address and I will understand that decision. On the other hand, if you do intend to incorporate these suggested modifications and find it necessary to obtain clarification of my comments, please do not hesitate to contact me.

Page 1-2, Natural and Cultural Resources and Uses, first paragraph: The text states that the tent rocks eroded from deposits erupted from the Valles Caldera, which is not true, and calls the caldera a crater, which is not consistent with geologic usage of the term "crater." I suggest changing the third sentence to read: *The light-colored, cone-shaped tent rock formations formed by erosion of layers of volcanic ash and stream-deposited gravel related to volcanic activity that occurred in the southern Jemez Mountains between 6 and 7 million years ago. Rhyolite lava filling one of the craters that was active at this time forms the steep canyon walls at the confluence of Peralta and Colle Canyons in the northern part of the Monument.*

Page 3-4, Geology, Minerals, and Paleontology; Geology (comments about the section):

- BLM geologists and resource managers will probably profit from reviewing the recently published geological map that includes the Monument and surrounding areas:

  Lynch, S.D., Smith, G.A., and Kuhle, A.J., Geology of Cañada quadrangle, Sandoval County, New Mexico: Socorro, New Mexico Bureau of Geology and Mineral Resources Open File Geologic Map, OF-GM-85, scale 1:24,000.
- This section is a reasonable brief description of the geology of the monument (with one exception discussed further below). The use of the term "Pajarito Plateau" to describe the physiography of the region differs from use by geologists, although I do not know the formal geographic use of the term. Geologists restrict the term "Pajarito Plateau" to the mesa and canyon area in the Los Alamos-White Rock region between the Sierra de los Valles and the Rio Grande. Certainly there are physiographic similarities between this region and the area around KKTR National Monument. However, if extending the term to the KKTR area, surely it would be much more proper to describe this as the *southwestern* edge of the Pajarito Plateau, rather than the "southeast edge," as currently stated in the document. The Rio Grande forms the eastern margin of the plateau, so the southeast edge would have to be on the river rather than at the monument.
- In the third paragraph of this section, the word "outcrops" appears as a verb. The word "outcrop" is a noun, so it would be grammatically much more correct to say that the Bandelier Tuff "crops out" in the area, rather than "outcrops." The wording of this paragraph implies that Bandelier Tuff is not present in the Monument and that all deposits are assigned to the Peralta Tuff Member and the Cochiti Formation. Actually, there are substantial and geologically important outcrops of the Bandelier Tuff just north and east of the slot canyon within the Monument. It may also be

worth noting that the scattered pumice deposits, partly mined in the past, resulted from the most recent eruptions within the Valles caldera from the El Cajete crater, approximately 40,000 years ago.
- It may be worthwhile to expand this section with a paragraph that includes the geological significance of faults in the Monument. The Pajarito fault, which crosses through the eastern part of the monument, is one of the longest geologically active faults in New Mexico. Smaller faults that split off of the Pajarito fault cross the popular Canyon Trail and provide some of the most dramatic and educational three dimensional exposures of faults that occur anywhere to my knowledge. Movement of hot water along faults from the Jemez Mountains led to mineral cementation of some layers at Tent Rocks so that the erosional landscape formed with its dramatic tents and canyons – otherwise it would probably look a lot like the unspectacular hills south of Peralta Canyon.

Page 3-4, Geology, Minerals, and Paleontology; Geology, last paragraph: The report attributes the formation of tents to differential erosion processes that involve the presence of welded tuff. There is no welded tuff at KKTR National Monument, so this explanation for the origin of tents is incorrect. There are two very different types of tent rocks at the monument and they formed in different materials by different processes. Given that the tent-rock features are a substantial visual and natural component of the monument that justify its designation (and name), it is appropriate, I feel, to include in your document a more complete and accurate description of how they form.

1. The least common tent rocks form in light-colored volcanic tuff and within the present monument exist only in a small area near the parking area and near the head of the slot canyon (pictured on the cover of the "Draft Plan and Environmental Impact Statement" book). Clearly, some part of the tuff is more resistant to erosion than most of the deposit, so that the resistant parts stand up in conical outcrops. There has not been any study to determine the origin of these features at Tent Rocks, but their mode of occurrence and comparison to tent rocks formed in tuff elsewhere in the Jemez Mountains suggests that the more resistant tuff was slightly cemented by microscopic mineral encrustations that precipitated around the ash and pumice fragments as hot steam filtered upward through the deposit shortly after it was emplaced as a hot mass of debris by explosive volcanic eruptions.
2. The most common tent rocks at the Monument, by far, formed by erosion of gravel and sand layers deposited by streams. The photo that serves as the frontispiece to Chapter 1 in the "Draft Plan and Environmental Impact Statement" illustrates this type of tent. A large cobble or boulder caps nearly all of these upward-tapering teepee-shaped features; some large boulders are precariously perched on very narrow pedestals. Geologists call these landscape features pedestal rocks, or hoodoos. As rainfall and snowmelt runoff runs in rivulets down the steep outcrops the water more readily loosens sand grains and small pebbles rather than the larger cobbles and boulders. Over time the larger fragments become more isolated from the surrounding ground surface as the small grains wash away. The sediment directly below the large cobbles and boulders is sheltered from erosion by the overlying cap rock and forms an ever-

> higher pedestal as surrounding sand and pebbles are carried downslope. Once a pedestal starts to form in this fashion, blowing wind swirls around the feature, carrying away some of the smaller grains comprising the pedestal and sculpting it into a smooth rounded form.

Page 2-11 and Map 5, Unique Geologic Features: I was unable to locate a definition of "unique geologic features" in the document and I do not know if this is a descriptive category peculiar to BLM classification of features. As a geologist, however, I am unable to determine the criteria applied to designate the "unique geologic areas" depicted on Map 5. It seems possible to me that these designated areas are those that have tent rocks, but even then it seems that the encircled regions do not all have tent rocks present. In addition, the geological value of the Monument extends beyond the tent rocks. What does "unique" mean? My Oxford Dictionary gives the primary definition of "unique" as something of "which there is only one, unequaled." No geologic feature at the Monument is a one-of-a kind. Tent-rock formations, for example, are present in many parts of the Jemez Mountains. While Kashe Katuwe Tent Rocks does represent a unique *combination* of geologic features, visual beauty, ecological transitions, and cultural value, the geologic features themselves are not unique. Perhaps it would be better to refer to "extraordinary geologic areas" that might then be defined as areas where geologic features are extremely well represented with high educational and aesthetic values. Such a designation would also permit recognition of the incredibly well exposed faults and remarkably informative outcrops of volcanic tuffs in addition to the erosional landforms called tents. That definition would permit objective and defendable designation of "extraordinary geologic areas." I would be glad to offer assistance in drafting an alternative to Map 5 that follows this definition if you desire.

Sincerely,

Gary A. Smith

Gary A. Smith
Professor

GOVERNOR
Bill Richardson

STATE OF NEW MEXICO
DEPARTMENT OF GAME & FISH

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M. H. "Dutch" Salmon, Commissioner
Silver City, NM

January 27, 2006

John Bristol
KKTR NM RMP Team Leader
Bureau of Land Management
435 Mantano Rd. NW
Albuquerque, NM 87107-4935

Re: Kasha-Katuwe Tent Rocks RMP EIS
NMGF No. 10445

Dear Mr. Bristol,

Thank you for the opportunity to review this document. Kasha-Katuwe Tent Rocks National Monument (KKTR) provides a very popular recreational opportunity, as well as containing important wildlife habitat. The Department of Game and Fish (Department) supports the BLM's intentions to close unnecessary roads, and eliminate motorized travel in areas of important wildlife habitat, as described in both Alternatives B and C. The actual retirement of livestock grazing (as called for in the establishment of the Monument) will significantly benefit the recreational, educational, and wildlife resources. Recent field visits have revealed significant impacts to the Monument as a result of the current livestock grazing. The Department, however, does have some concerns about some of the evaluations and apparent assumptions concerning sport hunting as a form of recreation and as a tool of wildlife management.

On page 9 of the *Kasha-Katuwe Tent Rocks National Monument Public Scoping Summary Report* (available on BLM website) it states "The Monument plan will recognize the State's responsibility and authority to manage wildlife, including hunting within the Monument." Additionally, all 3 Alternatives propose to designate large areas as "Semi-primitive Motorized" or "Semi-primitive Non-motorized" recreational opportunity. BLM's national policies list hunting as an appropriate recreational use in these types of areas (p. E-2). Local BLM regulations prohibit hunting in KKTR, citing public safety concerns. The only mention of hunting in this EIS is the paragraph beginning on p. 4-11 which states that allowing hunting would create direct short-term and possible long-term impacts to unique geologic features.

Sport hunting is an important form of recreation in New Mexico, with well documented economic benefits to local communities. It is also a valuable tool used by the Department to manage wildlife populations. Wildlife depredation has been an issue on private lands and reservations in the area of KKTR. The Department believes that carefully managed sport hunting could be a valid use of KKTR.

Clearly, the use of firearms in the Areas of Concentrated Recreational Use, as depicted on Map-3 would be a public safety issue. KKTR, however contains thousands of acres of backcountry where hunting, especially archery hunting, might be an appropriate activity. This issue could become even more significant if the Canada de Cochiti is acquired as part of KKTR.

There is no evidence provided to indicate that hunters would uniquely impact the tent rocks. Big game hunting tends to be a highly focused activity. Since the tent rocks do not represent a frequently utilized component of deer or elk habitat, hunters would not be attracted to these features at a higher rate than any other group of recreational or educational users, and would probably be less likely to impact them. Proper regulation and enforcement would have a greater likelihood of reducing this sort of impact than arbitrarily excluding an entire class of recreational user.

The Department is committed to working with BLM to determine proper uses of the wildlife resources in KKTR, but these issues have not been thoroughly evaluated in this EIS.

The new road access to the east side of KKTR, as proposed in Alternative C, would disperse some of the recreational use, possible reducing the impacts to other areas. The addition of motorized traffic could, however, increase the impacts of wildlife habitat fragmentation.

It is not clear exactly what the trail closures proposed under Alternative B would consist of, or what the resulting impacts would be. Would these trails simply not be marked or maintained by BLM, or would they be obliterated, rehabilitated, and posted to prohibit public access? Most of the existing impacts (soil compaction, erosion, and habitat destruction) recently observed on some of these trails was the result of continued livestock grazing, not human use. Closing these areas to public access would significantly reduce the recreational and educational opportunities for which the Monument was established.

Thank you for the opportunity to review and comment on your project. If you have any questions please contact Steve Anderson, Northwest Area Habitat Specialist, at (505) 222-4708 or stephen.anderson@state.nm.us

Sincerely,

Lisa Kirkpatrick

Lisa Kirkpatrick, Chief
Conservation Services Division

LK/sa

xc: Brian Hansen, New Mexico Ecological Services, USFWS
Jan Ward, Asst. Chief, Conservation Services, NMGF
Brian Gleadle, NW Area Operations Chief, NMGF
Steve Anderson, NW Area Habitat Specialist
Robert Livingston, NW Area Operations Asst. Chief

United States Department of the Interior
BUREAU OF INDIAN AFFAIRS
SOUTHWEST REGION
P.O. BOX 26567
Albuquerque, New Mexico 87125-6567

IN REPLY REFER TO:
620-Division of Environmental, Safety,
and Cultural Resource Management

FEB 02 2006

Memorandum

To: Director, Bureau of Land Management
Attention: John Bristol

From: Regional Director

Subject: Kasha-Katuwe Tent Rocks National Monument (KKTR)

Our office received the November 2005 Draft Resource Management Plan/Environmental Impact Statement (RMP/EIS) for review. The issues that we consider to be significant include Cultural Resources and Environmental Justice. Our office recognizes that proper consultation has been initiated by BLM with the pueblos and tribes that may have issues and concerns regarding this proposed RMP/EIS. We recommend that communication continue with the pueblos and tribes that have an interest and that BLM be upfront with them with any plans for the KKTR. Traditional uses within the KKTR are known by these pueblos and tribes and consideration for those uses have been addressed in the Draft RMP/EIS, provided the BLM is notified in advance for possible road or trail closures.

Environmental Justice was mentioned in the Draft RMP/EIS, we recommend that this section be further analyzed for each alternative, considering that the KKTR is near minority and low income populations and proposed actions may impact these populations.

Other general comments that may only require clarification include the following:

CHAPTER 2

1. It is mentioned in the Draft RMP/EIS that Fire Management will conform to the Resource Management Plan Amendment for Fire and Fuels Management on Public Land in New Mexico and Texas. Is there an accompanying environmental assessment (EA) for this document and if so, please elaborate on the types of treatments and equipment that would be considered for KKTR. Also, have treatments, such as fuel breaks been considered for the boundaries of the KKTR to reduce the risk of wildfire spread to adjacent Indian, private, and US Forest Service lands?

2. If Alternative A is chosen, when would the Rio Puerco Resource Management Plan, 1992 and Final Protection Plan for Tent Rocks, An Area of Critical Environmental Concern, 1987 is updated to address management decisions for the KKTR?

3. Under Alternative B, it is mentioned that new visitor facilities will be built to protect resources, how will these structures protect resources and will a site specific EA be prepared for the proposed facilities? Also, under this alternative, drinking water would be provided by BLM. Will the Final RMP/EIS determine which of the options will be pursued for attaining drinkable water for visitors? Will proposed facilities comply with the Safe Drinking Water Act?
4. Under Alternative C, the possibility of opening an additional eastern access route would not require NEPA analysis, why? Have cultural resources been identified within this proposed new access?

5. Herbicide use is mentioned along the Peralta Canyon stream. Will herbicides be applied by a licensed applicator? What percent of the shrubs to be treated are exotic species?

CHAPTER 4

1. Under Alternative A, Fire Management/Ecosystem Restoration, **Impacts from Recreational Uses**, will the public be educated on fire use in the monument boundaries? Will recreation areas or new facilities include fire pits or barbecue grills for public use? **Impacts from Vegetation and Woodland Management**, will slash created be pile or broadcast burned to prevent the spread of the bark beetle to healthy trees?

2. Under Alternative A, Visual Resources, **Impacts from Livestock Grazing,** can any of the range improvements be utilized for wildlife uses? If range improvements are removed, will the BLM reseed the disturbed areas or will the areas be left to natural succession? Thereby, increasing the chance of noxious weed establishment. **Impacts from Recreational Uses,** are all the actions within this RMP/EIS considered low-level? For high level actions, will a site specific EA be required?

3. Cumulative Impacts Under Alternative A, **Issue 1: Land Tenure Adjustment**, will there be a Cooperative Management Agreement (CMA) between BLM and the Pueblo of Santo Domingo, since 6400 acres of the original Tent Rocks Special Management Area was awarded to them? **Issue 2: Ecosystem Restoration,** will CMAs be established between the BLM and other federal agencies for vegetative treatments, due to the locality to adjacent trust lands?

Please address our comments in the Final RMP/EIS and continue Cultural and Traditional Cultural Practices consultation with concerned pueblos and tribes, regarding KKTR. If you have any questions or concerns, contact Ms. Priscilla Wade, Regional Environmental Protection Specialist, at (505) 563-3417.

Acting Regional Director

Cippy CrazyHorse
Governor

J. Leroy Arquero
Lt. Governor

Andrew Quintana
Treasurer

P.O. Box 70
255 Cochiti Street
Cochiti Pueblo, NM 87072-0070
PH# (505) 465-2244 FAX# (505) 465-1135

March 6, 2006

Ed Singleton
Bureau of Land Management
Attn: John Bristol

Re: Comments and response to Draft EIS and Management plan for Kasha-Katuwe Tent Rocks National Monument, Alternative B.

In August, 2005 Donald Suina, BLM liaison to Pueblo de Cochiti held discussions with the Bureau of Land Management Plans for the Kasha-Katuwe Tent Rocks National Monument. The Draft was reviewed by several Cochiti Councilmen and its attorneys and concerning issues were related to Donald Suina to be discussed and addressed by BLM.

Attached to this letter are the concerning issues from the Pueblo de Cochiti that were discussed on August 25, 2005 at the BLM office in Albuquerque.

Pueblo de Cochiti has recognized that proper consultations had been initiated by BLM with regards to the tribe's issues and concerns with our traditional uses and traditional sites within the Monument area. It is very important that Pueblo de Cochiti, and the Bureau of Land Management continue to work diligently together to achieve and fulfill the task and purpose of the Cooperative Agreement for the Kasha-Katuwe Tent Rocks National Monument.

Therefore upon further review of the Draft and consultations with BLM, Pueblo de Cochiti's preferred alternative plan is Alternative B, which affords protection of traditional sites, doesn't restrict traditional uses, protects natural resources and controls visitor usage, trails and roads.

It is part of the reason that the Monument was created, to protect, and preserve Pueblo de Cochiti's interests and ties to the Kasha-Katuwe Tent Rocks area.

If you should have any questions please do not hesitate to contact Donald Suina or my self at (505) 465-2244.

Sincerely,

CrazyHorse

Cippy CrazyHorse, Governor
PUEBLO DE COCHITI

8-25-2005

To: BLM
Re: Cochiti Pueblo Comments on the Draft Resource Management Plan/Environmental Impact Statement/

I. Preferred Alternative B with emphasis on road and trail closures on the Northeast section of Tent Rocks.

II. Traditional uses and cultural resources. Everywhere noted American Indian should include (Cochiti Pueblo). Protection of the Pueblo's interest is part of the reason the monument was created and also consultations might take some time and to adjust its timeframes and to act accordingly.

III. EIS. Are there plans with respect to the accommodations of traditional Cochiti Pueblo uses of the lands and it's cultural resources within the national monument? These uses are protected by the presidential proclamation creating the Monument and Cooperative Agreement between Cochiti Pueblo and BLM.

IV. Wild Life Habitat. Does the monument diminish the authority of the New Mexico Game and Fish Department over wild life? Will hunting conflict with other recreational uses and traditional uses that the Pueblo might have within the national monument or within the Canada de Cochiti grant? Can't the pueblo have special permission for traditional society big game hunts? This issue with the pueblo has been a loosing cause it has reflected or affected our songs, dances, and language which is part of our way of life because of the hunting regulations set by the New Mexico game and fish department.

V. Transportation With reference to the EIS. There was no discussion about the impact on the Pueblo as being the gateway to the monument and Jemez Mountains, with 50,000 or more visitors to the area how does it affect public safety the environment and the roads the transportation issue includes State Road 22, 16 and Tribal road 92? In conjunction with the corps of engineers operations, need to analyze jurisdictional and public safety issues. How does this affect the State, county, BIA and tribal enforcement?

VI. With respect to our Cooperative agreement, the Pueblo should be entitled to a place on the signature page that it concurs with the EIS/Management plans.

VII. The document lacks and minimizes Cochiti's relationship to BLM and the Monument area and doesn't recognize Cochiti as a Government Entity, but as merely as one of the Indian groups

VIII. Other issues not addressed. Dog problem, and aircraft in the area, and its affects on Cochiti Pueblo and Tent Rocks Area.

Appendices

Appendix A

Proclamation 7394 of January 17, 2001

APPENDIX A

Presidential Documents
7343 Federal Register / Vol. 66, No. 14 / Monday, January 22, 2001 / Presidential Documents

Proclamation 7394 of January 17, 2001

Establishment of the Kasha-Katuwe Tent Rocks National Monument
By the President of the United States of America, A Proclamation

Located on the Pajarito Plateau in north central New Mexico, the Kasha-Katuwe Tent Rocks National Monument is a remarkable outdoor laboratory, offering an opportunity to observe, study, and experience the geologic processes that shape natural landscapes, as well as other cultural and biological objects of interest. The area is rich in pumice, ash, and tuff deposits, the light-colored, cone-shaped tent rock formations that are the products of explosive volcanic eruptions that occurred between 6 and 7 million years ago. Small canyons lead inward from cliff faces, and over time, wind and water have scooped openings of all shapes and sizes in the rocks and have contoured the ends of the ravines and canyons into smooth semicircles. In these canyons, erosion-resistant caprocks protect the softer tents below. While the formations are uniform in shape, they vary in height from a few feet to 90 feet, and the layering of volcanic material intersperses bands of grey with beige colored rock.

Amid the formations and in contrast to the muted colors of the rocks of the monument, vibrant green leaves and red bark of manzanita, a shrubby species from the Sierra Madre of Mexico, cling to the cracks and crevices of the cliff faces. Red-tailed hawks, kestrels, violet-green swallows, and Western bluebirds soar above the canyons and use the pinion and ponderosa covered terrain near the cliffs.

The complex landscape and spectacular geologic scenery of the Kasha-Katuwe Tent Rocks National Monument has been a focal point for visitors for centuries. Human settlement is believed to have begun in the monument as a series of campsites during the Archaic period, from approximately 5500 B.C. During the fifteenth century, several large ancestral pueblos were established in the area. Their descendants, the Pueblo de Cochiti, still inhabit the surrounding area. Although the Spanish explorer Don Juan de Oñate reached the Pajarito Plateau in 1598, it was not until the late eighteenth century that families began to claim land grants around Tent Rocks from the Spanish Crown. Remnants of human history are scattered throughout the monument.

Section 2 of the Act of June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), authorizes the President, in his discretion, to declare by public proclamation historic landmarks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be national monuments, and to reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected.

WHEREAS it appears that it would be in the public interest to reserve such lands as a national monument to be known as the Kasha-Katuwe Tent Rocks National Monument: NOW, THEREFORE, I, WILLIAM J. CLINTON, President of the United States of America, by the authority vested in me by section 2 of the Act of 7344 Federal Register / Vol. 66, No. 14 / Monday, January 22, 2001 / Presidential Documents and June 8, 1906 (34 Stat. 225, 16 U.S.C. 431), do proclaim that there are hereby set apart and reserved as the Kasha-Katuwe Tent Rocks National Monument, for the purpose of protecting the objects identified above, all lands and interests in lands owned or controlled by the United States within the boundaries of the area described on the map entitled ''Kasha- Katuwe Tent Rocks National Monument'' attached to and forming a part of this proclamation. The Federal land and interests in land reserved consist of approximately 4,148 acres, which is the smallest area compatible with the proper care and management of the objects to be protected.

All Federal lands and interests in lands within the boundaries of this monument are hereby appropriated and withdrawn from all forms of entry, location, selection, sale, or leasing or other disposition under the public land laws, including but not limited to withdrawal from location, entry, and patent under the mining laws, and from disposition under all laws relating to mineral and geothermal leasing, other than by exchange that furthers the protective purposes of the monument.

For the purpose of protecting the objects identified above, the Secretary shall prohibit all motorized and mechanized vehicle use off road, except for emergency or authorized administrative purposes.

Lands and interests in lands within the proposed monument not owned by the United States shall be reserved as a part of the monument upon acquisition of title thereto by the United States. The Secretary of the Interior shall manage the monument through the Bureau of Land Management, pursuant to applicable legal authorities and in close cooperation with the Pueblo de Cochiti, to implement the purposes of this proclamation.

The Secretary of the Interior shall prepare, within 3 years of this date, a management plan for this monument, and shall promulgate such regulations for its management as he deems appropriate. The management plan shall include appropriate transportation planning that addresses the actions, including road closures or travel restrictions, necessary to protect the objects identified in this proclamation and to further the purposes of the American Indian Religious Freedom Act of August 11, 1978 (42 U.S.C. 1996).

Only a very small amount of livestock grazing occurs inside the monument. The Secretary of the Interior shall retire the portion of the grazing allotments within the monument, pursuant to applicable law, unless the Secretary specifically finds that livestock grazing will advance the purposes of the proclamation.

The establishment of this monument is subject to valid existing rights.

Nothing in this proclamation shall be deemed to enlarge or diminish the jurisdiction of the State of New Mexico with respect to fish and wildlife management.

This proclamation does not reserve water as a matter of Federal law. Nothing in this reservation shall be construed as a relinquishment or reduction of any water use or rights reserved or appropriated by the United States on or before the date of this proclamation. The Secretary shall work with appropriate State authorities to ensure that any water resources needed for monument purposes are available. Nothing in this proclamation shall be deemed to revoke any existing withdrawal, reservation, or appropriation; however, the national monument shall be the dominant reservation.

Warning is hereby given to all unauthorized persons not to appropriate, injure, destroy, or remove any feature of this monument and not to locate or settle upon any of the lands thereof.

IN WITNESS WHEREOF, I have hereunto set my hand this seventeenth day of January, in the year of our Lord two thousand one, and of the 7345 Federal Register / Vol. 66, No. 14 / Monday, January 22, 2001 / Presidential Documents Independence of the United States of America the two hundred and twenty-fifth.

Signed by President William Clinton

7346 Federal Register / Vol. 66, No. 14 / Monday, January 22, 2001 / Presidential Documents
[FR Doc. 01–2099
Filed 1–19–01; 8:45 am]
Billing code 3195–01–CV

Appendix B

Noxious Weed Prevention

APPENDIX B

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Albuquerque Field Office
435 Montaño Rd. N.E.
Albuquerque, New Mexico 87107- 4935
www.nm.blm.gov

IN REPLY REFER TO:
9220 (010)

May 14, 1999

Instruction Memorandum NM-010-99-01
Expires: 9/30/2000

To: All Employees

From: Field Manager (010)

Subject: Noxious Weed Prevention Schedule for the Albuquerque Field Office

Noxious weeds are spreading nationally at 2300 acres/day on BLM lands. If cooperative weed management efforts are not dramatically increased approximately 19 million acres bureauwide will be infested with these invasive plants by the year 2000. The serious threat from noxious weeds warrants inclusion of noxious weeds as one of the mandatory items in BLM's National Environmental Policy Act Handbook, H-1790-1. Within the Albuquerque Field Office we have known populations of Russian knapweed, musk thistle, bull thistle, Canada thistle, Scotch thistle, whitetop, and Halogeton.

The Partners Against Weeds (PAWS) action plan for BLM (January 1996) established some general guidelines to be implemented to help prevent the introduction or spread of noxious weeds. These preventative measures should be applied to BLM actions such as range improvements, fire rehabilitation, and road maintenance, as well as BLM authorized actions including rights-of-way, oil and gas activities, grazing permits, and recreation permits.

The goals and strategies identified in PAWS will be implemented as needed for noxious weed management for the Albuquerque Field Office. A summary of portions of the PAWS action plan which need to be implemented immediately are as follows:

Goal 1—Prevention and Detection

The Field Office will delineate high priority areas for prevention of noxious weed infestation. Review and modify where necessary, all activities authorized or conducted on BLM land for their potential to spread weeds. This includes evaluating the potential for noxious weed invasion in the effects analysis of each NEPA document. Newly introduced weed species will be identified and documented.

Goal 2—Education and Awareness

The Field Office will conduct workshops for all field personnel to update their knowledge of noxious weeds, to include identification and the problems noxious weeds can cause. The Field Office will continue to work to establish county weed associations in developing and implementing outreach plans.

Goal 3—Inventory

The Field Office will monitor all known populations of noxious weeds and update the inventory as needed on a yearly basis.

Goal 4—Planning

Include provisions for noxious weed management in all BLM-funded or authorized actions. See Weed Prevention Schedule and Appendix 4 (attached) from the PAWS for specific actions to be considered.

Goal 5—Integrated Weed Management (IWM)

The Field office will determine the best management options using a combination of the four general categories identified for weed management Cultural, Physical Control, Biological Control or Herbicides. See appendix 5 (attached) from PAWS for specific guidelines.

Goal 6—Coordination

The Field Office will continue and expand cooperation with other federal agencies, state and county governments, organizations and private landowners in the fight against weeds.

Goal 7—Monitoring, Evaluation, Research and Technology Transfer

The Field Office will continue to work with the Cooperative Extension Service and others on research for control methods for Noxious Weeds. Monitoring programs will be established to determine if we are meeting our management objectives with our weed management programs.

Signed by:	Authenticated by:
Edwin J. Singleton Field Manager	Jeanne Holtby Staff Asst.

1 Attachment:
  1—AFO Weed Prevention Schedule (3 pp)

ALBUQUERQUE FIELD OFFICE WEED PREVENTION SCHEDULE

PREVENTION ACTIVITY	WHEN	STAFF
Require that all road construction and maintenance equipment be free of mud, dirt and plant parts before moving from infested areas. Gravel and fill pits should be inspected to ensure they are weed free.	All Year	Lands and Minerals & Engineering Teams
Re-establish vegetation on all areas of soil disturbance. Proper dates and the seeding mix to be used will be provided by the Albuquerque Field Office. Only certified weed free seed and mulch will be used in the re-establishment of vegetation. All reseeded sites should be monitored and permit holder notified if spot reseeding is required.	All Year	Lands and Minerals & Watershed & Engineering Teams
All Range, Watershed, and Wildlife Projects and all Land Use Permits should include a stipulation requiring monitoring for and treatment of noxious weed infestations that occur after a permit is issued. Method of treatment for any infestations must be approved by the Albuquerque Field Office.	All Year	Lands and Minerals & Watershed Teams
Environmental analysis for all Range, Watershed, Wildlife, and Recreation Projects and all Land Use Permits will include weed-risk considerations.	All Year	Lands and Minerals & Watershed Teams & Recreation
Require that supplemental feed be certified weed free. Any permit allowing livestock on the site should have a stipulation that weed free feed be used. Require that all pack and saddle stock in Wilderness Study Areas, Areas of Critical Environmental Concern, Recreation Areas or sensitive areas use only certified weed free feed. Encourage the use of weed free feed in all areas.	All Year	Lands and Minerals & Watershed Teams & Recreation
All Special Recreation Use Permits should include a stipulation requiring on-site weed control and minimization of spread to other areas. Method of treatment for any infestations must be approved by the Albuquerque Field Office.	All Year	Recreation
Sign trailheads of pack and saddle stock trails for weed awareness and weed prevention techniques.	All Year	Recreation
In allotments with infestations and weed free areas, control timing of animal movement to prevent movement from infested sites to noninfested after seed set. Avoid grazing any vegetative treatment site (brush control, sagebrush shaving, reseeded sites or prescribed burn sites) until vegetation is well established.	All Year	Watershed Team
Include weed prevention and treatment in all mining plans of operation and reclamation plans. Retain bonds for weed control until the site is	All Year	Lands and Minerals Team

PREVENTION ACTIVITY	WHEN	STAFF
returned to vegetative conditions matching the surrounding area. Method of treatment for any infestations must be approved by the Albuquerque Field Office.		
Require that all archaeological site excavations greater than 1/4 acre be reclaimed. Dates of seeding and seed mix to be used will be provided by the Albuquerque Field Office. Seed must be certified weed free.	All Year	Cultural Team
Will establish weed management areas and work to expand the cooperation with other federal agencies, state and county governments, organizations and private landowners in the fight against weeds.	All Year	Watershed Team & Weed Coordinator
Distribute public information/ brochures. Weed identification training for field going employees and managers. Participate in state and local workshops that deal with noxious weed management.	All Year	Watershed Team & Weed Coordinator & Public Affairs

NOXIOUS WEED STIPULATIONS FOR ALL PERMITS, EA's, & EIS's

Noxious weed control Standard Operating Procedures found in Instruction Memorandum NM-010-99-01 (Weed Prevention Schedule for Albuquerque Field Office) will be followed.

- Ensure equipment involved in land disturbing actions, be clean of noxious weed seeds or propagative parts prior to entry on site. When working in areas with noxious weeds equipment should be cleaned prior to moving off site.

- Survey and inventory proposed work areas for noxious weeds; take reasonable measures to avoid spread of noxious weeds found (i.e., - cleaning equipment with pressure washers, stockpiling overburden material for later treatment, avoiding driving through weed patches).The following noxious weeds have been identified as occurring on lands within the boundaries of the Albuquerque Field Office (AFO).

  1) Russian knapweed (*Centaurea repens*)
  2) musk thistle *(Carduus nutans)*
  3) bull thistle (*Cirsium vulgare)*
  4) Canada thistle (*Cirsium arvense)*
  5) Scotch thistle *(Onopordum acanthium)*
  6) hoary cress *(Cardaria draba)*
  7) perennial pepperweed *(Lepidium latifolium)*
  8) Halogeton (*Halogeton glomeratus)*
  9) spotted knapweed *(Centaurea maculosa*
  10) dalmation toadflax *(Linaria genistifolia)*
  11) yellow toadflax *(Linaria vulgaris)*
  12) camelthorn *(Alhagi pseudalhagi)*
  13) yellow starthistle *(Centaurea solstitialis)*
  14) saltcedar *(Tamarix spp.)*

15) diffuse knapweed (Centaurea diffusa)

- Use only certified weed free erosion control and re-vegetation materials (eg. mulch, seed, natural fiber mats).
- If fill dirt or gravel will be required, the source needs to be noxious weed free.
- The site should be monitored for the life of the project for the presence of noxious weeds (includes maintenance & construction activities). If weeds are found the AFO will be notified and the AFO will determine the best method for the control of the particular weed species.
- Reclamation and revegetation of the work site will use species specified by the AFO. All seed shall be certified weed free. The area will be monitored to determine the success of the revegetation, and revegetation will continue until successful.

Appendix C

Best Management Practices for Use with Vegetation Treatment Methods

TABLE C

BEST MANAGEMENT PRACTICES FOR USE WITH VEGETATION TREATMENT METHODS

Resource Element	Best Management Practices per Treatment Method			
	Prescribed Fire	**Mechanical**	**Chemical**	**Biological**
Guidance Documents	BLM Handbook H-9214-1, Prescribed Fire Management 2000	BLM Manual 1112 (Safety)	BLM Handbooks H-9011-1 & H-9015	BLM Manuals 1112, 4100 & 9014
General	Prepare Fire Management Plan. Use trained personnel with adequate equipment.	Ensure that power cutting tools have approved spark arresters. Wash vehicles & equipment before leaving weed infested areas to avoid infecting weed-free areas. Minimize soil disturbance which may encourage new weeds to develop.	Prepare spill contingency plan in advance of treatment. Select chemical that is least dangerous to environment while providing the desired results. Keep records of each application, including the active ingredient, formulation, application rate, date, time, & application.	Use only biological control agents that have been tested & approved to ensure they are host-specific. Manage the intensity & duration of grazing.
Land Use	Carefully plan fires in wildland-urban interface to avoid loss of property. Notify nearby residents & landowners who could be affected by smoke intrusions or other fire effects.		Consider surrounding land use before aerial spraying. Comply with herbicide-free buffer zones to ensure that no drift will affect adjoining landowners.	
Air Quality Refer to Manual 7000	Evaluate weather conditions, including wind speed & atmospheric stability, to predict effects of burn & impacts from smoke. Coordinate burn activities with New Mexico Environment Department. Burn when weather conditions are good for rapid smoke dispersion.	Minimize generation of dust & exhaust.	Consider effects of wind, humidity, temperature inversions, & rainfall on herbicide effectiveness & risks.	
Geology, Minerals, Oil & Gas	Maintain safety buffer between burn area & facilities.	Minimize area of surface disturbance.		
Soil	Minimize broadcast burning on highly erodible soils. Re-seed if needed following treatment to encourage revegetation & minimize erosion. Minimize soil heating by pre-treatment of fuels where practical.	Implement erosion control measures where heavy equipment is used. Limit heavy equipment use on slopes greater than 30 percent. Conduct activities on dry or frozen soil to minimize soil compaction. Avoid damage to biological crusts.	Avoid treating areas in which herbicide runoff is likely. Consider soil mobility.	

TABLE C

BEST MANAGEMENT PRACTICES FOR USE WITH VEGETATION TREATMENT METHODS

Resource Element	Best Management Practices per Treatment Method			
	Prescribed Fire	**Mechanical**	**Chemical**	**Biological**
Water Resources Refer to Manual 7000 & Memorandum of Understanding w/ New Mexico Environment Department	Maintain minimum buffer of 25-50 feet between burn area & water bodies. Minimize burning on hillslopes with high erosion potential & consider revegetation to mitigate. Prevent degradation of groundwater quality whenever practicable, even when WQCC standards allow for further degradation. Develop site-specific BMPs for actions that degrade groundwater quality through nonpoint source pollution, for groundwater with total dissolved solids (TDS) <10,000 mg/l.	Maintain minimum buffer of 25-50 feet between burn area & water bodies. Reseed skid trails & roads closed after operations. Install erosion-control structures on roads used. Prevent degradation of groundwater quality whenever practicable, even when WQCC standards allow for further degradation. Develop site-specific BMPs for actions that degrade groundwater quality through nonpoint source pollution, for groundwater with TDS <10,000 mg/l.	Consider climate, soil type, slope, & vegetation types in determining the risk of herbicide to water resources. Follow label instructions, especially near water bodies. Prevent degradation of groundwater quality whenever practicable, even when WQCC standards allow for further degradation. Develop site-specific BMPs for actions that degrade groundwater quality through nonpoint source pollution, for groundwater with TDS <10,000 mg/l. Evaluate site-specific potential for groundwater contamination with the Environmental Protection Agency rating system DRASTIC.	Avoid using livestock near residential or domestic water sources. Use grazing plans & systems to improve public land health. Prevent degradation of groundwater quality whenever practicable, even when WQCC standards allow for further degradation. Develop site-specific BMPs for actions that degrade groundwater quality through nonpoint source pollution, for groundwater with TDS <10,000 mg/l.
Streams & Wetlands	Maintain minimum buffer of 25-50 feet between burn area & water bodies. Minimize burning on hillslopes with high erosion potential & consider revegetation to mitigate.	Maintain minimum buffer of 25-50 feet between burn area & water bodies.	Apply buffer zones of 100 feet for aerial application, 25 feet for ground application, & 10 feet for hand application. Follow label instructions for control of saltcedar.	Avoid using livestock near residential or domestic water sources.
Vegetation Refer to Handbook H-4410-1, 5000, & 9015	Conduct burn prescriptions to minimize residual damage to desirable trees. Mitigate soil erosion by constructing erosion control structures on any control lines used.	Minimize disturbance to native vegetation by keeping equipment on existing roads & trails. Reseed skid trails & roads to be closed after operations. Install erosion control structures on roads used.	Avoid damage to non-target plants by using selective herbicides or selective equipment. Reduce drift hazard to non-target species. Minimize the use of broadcast foliar applications to reduce the creation of large areas of browned vegetation.	Use grazing animals at times most likely to damage invasive species. Exclude livestock from revegetated areas for at least two growing seasons.
Fish Refer to	Maintain a vegetated buffer near fish-bearing streams to minimize soil erosion & soil runoff into streams.	Avoid treatments adjacent to fish-bearing waters.	Avoid treatments near fish-bearing streams during periods when fish are in life stages most sensitive to the herbicide	Limit access of grazing animals to streams & other water bodies to minimize sediments entering water &

TABLE C

BEST MANAGEMENT PRACTICES FOR USE WITH VEGETATION TREATMENT METHODS

Resource Element	Best Management Practices per Treatment Method			
	Prescribed Fire	**Mechanical**	**Chemical**	**Biological**
Manuals 6500 & 6780		Refuel & service equipment away from water bodies. Maintain vegetated buffer between treatment area & water body.	used. Use appropriate buffer zones based on label instructions & risk.	potential for damage to fish habitat.
Wildlife Refer to Manuals 6500 & 6780	Avoid treatments during nesting & other critical periods for birds & other wildlife.	Retain wildlife trees & other unique habitat features where practical. Vegetation management strategies should be consistent with historical succession & disturbance regimes. Fuels treatments should consider habitat needs of migratory & non-migratory populations. Avoid treatments during nesting & other critical periods for birds & other wildlife.	Use herbicides of low toxicity to wildlife. Avoid treatments during nesting & other critical periods for birds & other wildlife.	
Threatened & Endangered (T&E) Species Refer to Manual 6840	Avoid direct impacts to listed species if project may impact listed species, unless studies show that species will benefit from fire. Survey for T& E species & consult with US Fish & Wildlife Service (USFWS) as needed if project may impact listed species. Refer to site-specific conservation measures from Biological Evaluation.	Avoid use of ground disturbing equipment near T&E species. Survey for T&E species & consult with USFWS as needed if project may impact listed species. Refer to site-specific conservation measures from Biological Evaluation.	Survey for T&E species & consult with USFWS as needed if project may impact listed species. Refer to site-specific conservation measures from Biological Evaluation.	
Wild Free-Roaming Horses & Burros	Do not burn extensive, contiguous areas of the Herd Management Area in the same year. Start prescribed fires in such a way as to decrease the likelihood of horses running through fences.		Avoid using herbicides in areas actively grazed by wild horses & burros.	

TABLE C

BEST MANAGEMENT PRACTICES FOR USE WITH VEGETATION TREATMENT METHODS

Resource Element	Best Management Practices per Treatment Method			
	Prescribed Fire	Mechanical	Chemical	Biological
	Limit burning during the peak foaling period form March 1 through June 30.			
Livestock Refer to Handbook H-4120-1	Notify permittees of livestock feeding restrictions in treated areas, if needed. Provide alternative forage sites for livestock, if use areas burn.	Notify permittees of livestock feeding restrictions in treated areas, if needed. Provide alternative forage sites for livestock, if needed.	Notify permittees of livestock feeding restrictions in treated areas, if needed. Provide alternative forage sites for livestock, if needed.	
Cultural Resources & Native American Religious Concerns Refer to NM BLM Protocol w/ State Historic Preservation Office (SHPO) & Manuals 8100 & 8160	Evaluate potential impacts of proposed treatment. Conduct cultural resource inventories to identify sites at risk from treatment. Develop avoidance measures & project-specific treatment measures to protect sites by reducing fuel loads in the vicinity of at-risk sites. Consult with SHPO & tribes per NM Statewide Protocol Agreement. Monitor effectiveness of site protection measures (Appendix A.5, Monitoring & Adaptive Management).	Evaluate potential impacts of proposed treatment. Conduct cultural resource inventories to identify sites at risk from treatment. Develop avoidance measures & project- specific treatment measures to protect sites by reducing fuel loads in the vicinity of at-risk sites. Consult with SHPO & tribes per NM Statewide Protocol Agreement. Monitor effectiveness of site protection measures.	Evaluate potential impacts of proposed treatment. If application methods involve ground disturbing activities, conduct cultural resource inventories & implement avoidance measures. Consult with SHPO & tribes per NM Statewide Protocol Agreement. Monitor effectiveness of site protection measures.	Evaluate potential impacts of proposed treatment. If application methods involve ground disturbing activities, conduct cultural resource inventories as appropriate, & implement avoidance measures. Consult with SHPO & tribes per NM Statewide Protocol Agreement. Monitor effectiveness of site protection measures.
Visual Resources Refer to Manual 8400 & H-8410-1	Minimize or avoid prescribed burning under conditions that could result in smoke impacting PSD Class I areas. Maintain natural vegetated buffer between burn areas & public high use areas. Revegetate treated sites if needed. Use existing roads & minimize fireline construction.	Minimize dust drift, especially near recreational or other public use areas. Minimize earthwork & locate from prominent topographic features. Revegetate treated sites if needed.	Minimize the use of broadcast foliar applications to reduce the creation of large areas of browned vegetation. Minimize herbicide drift.	
Wilderness Areas. Refer to Handbooks H-	Minimize or avoid soil-disturbing activities during fire suppression or prescribed fire activities.	Use least intrusive methods possible to achieve objectives, & use non-motorized equipment where possible.	Revegetate sites with native species unless there is no reasonable expectation of natural regeneration.	Use least intrusive methods possible to achieve objectives, & use non-motorized equipment where possible.

TABLE C

BEST MANAGEMENT PRACTICES FOR USE WITH VEGETATION TREATMENT METHODS

Resource Element	Best Management Practices per Treatment Method			
	Prescribed Fire	Mechanical	Chemical	Biological
8550-1, H-8560-1, 8351, 8560, plus Specific instructions in Fire Mgt. Unit descriptions & Appendix F of Resource Advisor Guide	Revegetate sites with native species unless there is no reasonable expectation of natural regeneration.		Use hand treatments of herbicides only when weeds are spreading within the wilderness or threaten lands outside the wilderness.	
Recreation Refer to Handbook H-1601-1	Control public access to potential burn areas.	Control public access until potential treatment hazards no longer exist.	Control public access until potential treatment hazards no longer exist. Post signs noting exclusion areas & duration of exclusion.	
Rights-of-Way	Avoid or minimize prescribed burning under powerlines.			
Health & Safety	Use some form of pre-treatment, such as mechanical or manual treatment, in areas where fire cannot be safely introduced due to hazardous build-up. Always use appropriate safety equipment & Personal Protective Equipment (PPE). Notify nearby residents who could be affected by smoke.	Always use appropriate safety equipment & PPE.	Always use appropriate safety equipment & PPE. Have copy of Material Safety Data Sheets at work site. Follow label instructions & BLM procedures in Handbooks H-9011-1, 1112, & 9015.	Always use appropriate safety equipment & PPE.

Appendix D

Visual Resource Management Classes and Objectives

APPENDIX D

VISUAL RESOURCE MANAGEMENT CLASSES AND OBJECTIVES

The overall objective of Visual Resource Management (VRM) is to manage public lands administered by the Bureau of Land Management (BLM) in a manner that will protect the quality of the visual (scenic) values in accordance with Section 102(a)(8) of the Federal Land Policy and Management Act of 1976. The VRM system uses a methodical approach to inventory and manage the scenic resources of the public lands. It provides a way to identify visual (scenic) values, to establish management objectives through the Resource Management Planning process or on a case-by-case basis, and to provide timely input into proposed surface-disturbing projects.

The visual resource inventory process (BLM Manual H-8410-1) provides the BLM with a means of determining visual values. The inventory consists of a scenic quality evaluation, a sensitivity level analysis, and a delineation of distance zones. Based on these factors, BLM-administered lands are placed into one of four VRM classes.

Class I, the most highly valued, is assigned to those areas where decisions have been made to maintain a natural landscape. This includes areas such as national wilderness, the wild component of a Wild and Scenic River, scenic Areas of Critical Environmental Concern, and other congressionally and administratively designated areas.

Classes II, III, and IV are assigned based on a combination of scenic quality, sensitivity level, and distance. The specific VRM class objectives provide the standards for planning, designing and evaluating actions.

The Visual Contrast Rating System (Manual Section 8431) provides a methodical way to evaluate activities and determine whether they conform with the approved VRM objectives. The degree of contrast is measured in terms of the basic elements of form, line, color, and texture in the predominant natural features of the characteristic landscape.

The VRM classes and their management objectives are as follows.

Class I. To preserve the existing character of the landscape. This class provides for natural ecological changes; however, it does not preclude limited management activity. The level of change to the characteristic landscape should be very low and must not attract attention.

Class II. To retain the existing character of the landscape. The level of change to the characteristic landscape should be low. Management activities may be seen, but should not attract the attention of the casual observer. Any changes must mimic the basic elements of form, line, color, and texture found in the predominant natural features of the characteristic landscape.

Class III. To partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should mimic the basic elements found in the predominant natural features of the characteristic landscape.

Class IV. To provide for management activities that require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. These management activities may dominate the view and be a major focus of viewer attention. However, every attempt should be made to minimize the impact of these activities through careful location, minimal disturbance, and repetition of the basic landscape elements.

Appendix E

Recreation Opportunity Spectrum

APPENDIX E

RECREATION OPPORTUNITY SPECTRUM

INTRODUCTION

The goal of the recreationist is to have satisfying leisure experiences by participating in preferred activities in favorable environmental settings. Opportunities for achieving satisfying experiences depend on natural elements such as vegetation, landscape and scenery, and conditions controlled by land-management agencies, such as developed sites, roads and regulations. The goal of the recreation resource manager then becomes to provide the opportunities to obtain such experiences by managing the natural setting and the activities within it.

The Recreation Opportunity Spectrum (ROS) is the BLM s framework to inventory, plan and manage recreational opportunities. The ROS is divided into six classes, ranging from essentially natural, low-use areas (resource-dependent recreational opportunities) to highly developed, intensive use areas (facility/vehicle-dependent recreational opportunities). Each class is defined in terms of three principal components: the environmental setting, the activities possible, and the experiences that can be achieved.

The primary factor in determining ROS classes is the setting. This describes the overall outdoor environment in which activities occur, influences the types of activities, and ultimately determines the types of recreation that can be achieved.

Activities are not completely dependent on opportunity class, and most can take place in some form throughout the spectrum. However, general activities can be characterized for each ROS class. For each person, her/his recreational experience depends on the environmental setting and individual differences based on background, education, sex, age and place of residence.

RECREATION OPPORTUNITY SETTINGS

The ROS encompasses a variety of recreational settings under which certain experiences are possible. Seven elements provide the basis to inventory and delineate recreational settings. These are: access, remoteness, naturalness, facility and site management, visitor management, social encounters, and visitor impacts.

Access--Includes the mode of travel used within the area and influences both the level and type of recreational use an area receives.

Remoteness--Concerns the extent to which individuals perceive themselves removed from human activity. Vegetation or topographic variation can increase this sense of remoteness. Lack of remoteness is important for some recreational experiences.

Naturalness--Concerns the varying degrees of human modification of the environment. Often described in terms of scenic quality influenced by the degree of alteration of the natural landscape.

Site Management--Refers to the level of site development. Lack of site modifications can facilitate feelings of self-reliance and naturalness, while highly developed facilities can enhance comfort and increase the opportunity to meet and interact with others.

Visitor Management--Includes both regulation and control of visitors as well as providing them with information and services. A continuum of visitor management can be described, ranging from subtle techniques such as site design, to strict rules and regulations. In some recreational settings controls are expected and appropriate; in others, onsite controls detract from the desired experience.

Social Encounters--Involve the number and type of others met in the recreation area. Also measures the extent to which an area provides experiences for solitude or social interaction.

Visitor Impacts--Affect natural resources such as soil, vegetation, air, water and wildlife. Even low levels of use can produce significant ecological impacts, and these impacts can influence the visitor s experience.

RECREATION OPPORTUNITY CLASSES

Based on the seven elements described above, six recreation opportunity classes have been developed and are described below. Reclassification of lands can occur in response to alternative management prescriptions.

Primitive

This setting is characterized by a large-sized area of about 5,000 acres or more, lying at least 3 miles from the nearest point of motor vehicle access. It is essentially an unmodified natural landscape, with little evidence of others and almost no onsite management controls. Activities include overnight backpack camping, nature study and photography, back-country hunting, horseback riding, and hiking. The experience provides visitors with a chance to achieve solitude and isolation from human civilization, feel close to nature, and encounter a greater degree of personal risk and challenge.

Semi-Primitive Nonmotorized

This setting consists of about 2,500 acres lying at least ‰mile from the nearest point of motor vehicle access. The area is predominantly a natural landscape. Where there is evidence of others, interaction is low, and few management controls exist. Activities include backpack camping, nature viewing, back-country hunting (big game, small game, and upland birds), climbing, hiking, and cross-county skiing. The experience provides for minimal contact with others, a high degree of interaction with nature and a great deal of personal risk and challenge.

Semi-Primitive Motorized

This setting consists of about 2,500 acres within ‰mile of primitive roads and two-track vehicle trails. The area has a mostly natural landscape with some evidence of others (but numbers and frequency of contact seem to remain low) and few management controls. Activities include hunting, climbing, vehicle trail riding, back-country driving, mountain biking, hiking, and snowmobiling. The experience provides for isolation from human civilization, a high degree of interaction with the natural environment and a moderate degree of personal risk and challenge.

Roaded Natural

This setting consists of areas near improved and maintained roads. While these areas are mostly natural in appearance, some human modifications are evident, with moderate numbers of people, visible management controls and developments. Activities include wood gathering, downhill skiing, fishing, off-highway vehicle driving, interpretive uses, picnicking, and vehicle camping. The experience provides for a sense of security through the moderate number of visitors and developments, some personal risk-taking and challenges.

Rural

This setting is characterized by a substantially modified natural environment. Resource modification, development and use are obvious. Human presence is readily evident, and interaction between users is often moderate to high. Activities consist mostly of facility/vehicle-dependent recreation and generally include vehicle sightseeing, horseback riding, on- road biking, golf, swimming, picnicking, and outdoor games. The experience provides for modern visitor conveniences, moderate to high levels of interactions with others, and a feeling of security from personal risk.

Urban

This setting consists of areas near paved highways, where the natural landscape is dominated by human modifications. Large numbers of users can be expected. Sights and sounds of others dominate, while management controls are numerous. Activities are facility/vehicle-dependent and include concerts, wave pools, amusement parks, zoos, vehicle racing facilities, spectator sports and indoor games. The experience provides for numerous modern conveniences, large numbers of people, interaction with an exotic and manicured environment, and a feeling of high personal security.

MANAGEMENT OBJECTIVES FOR ROS CLASSES

Objectives for a specific class contain minimum guidelines and standards as well as directions concerning the type of activities, physical and social settings, and recreational opportunities to be managed for.

Primitive

The primitive class is managed to be essentially free from evidence of humans and onsite controls. Motor vehicle use within the area is not permitted. The area is managed to maintain an extremely high probability of experiencing isolation from others (not more than three to six encounters per day) and little to no managerial contact. Independence, closeness to nature, self-reliance and an environment that offers a high degree of challenge and risk characterize this class. Back-country use and management of renewable resources is subject to the protection of back-country recreational values.

Semi-Primitive Nonmotorized

Semi-primitive nonmotorized areas are managed to be largely free from the evidence of humans and onsite controls. Motor vehicle use is not permitted (except as authorized). Facilities for the administration of livestock and for visitor use are allowed but limited. Project designs stress the protection of natural values and maintenance of the predominantly natural environment. Areas are managed to maintain a good probability of experiencing minimum contact with others, self-reliance through the application of back-country skills, and an environment that offers a high degree of risk and challenge.

Back-country use and management of renewable resources are dependent on maintaining naturally occurring ecosystems. The consumption of renewable resources is subject to the protection of back-country recreational values.

Semi-Primitive Motorized

These areas are managed to provide a natural-appearing environment. Evidence of humans and management controls are present but subtle.

Motor vehicle use is allowed, but the concentration of users should be low. Onsite interpretive facilities, low-standard roads and trails, trailheads, and signs should stress the natural environment and be the minimum necessary to achieve objectives.

The consumption of natural resources is allowed. Effort is taken to reduce the impact of utility corridors, rights-of-way, and other surface- disturbing projects on the natural environment. Frequency of managerial contact with visitors is low to moderate.

Roaded Natural

Roaded natural areas are managed to provide a natural appearing environment with moderate evidence of humans. Motor vehicle use is permitted and facilities for this use are provided. Concentration of users is moderate with evidence of others prevalent. Resource modification and use practices are evident but harmonize with the natural environment.

Placement of rights-of-way, utility corridors, management facilities, and other surface-disturbing activities would be favored here over placement in semi-primitive nonmotorized and semi-primitive motorized areas. The consumption of natural resources is allowed except at developed trailheads, developed recreational areas and sites, and where geological, cultural, or natural interests prevail. Frequency of managerial contact with visitors is moderate.

Rural

Rural areas are managed to provide a setting that is substantially modified with moderate to high evidence of civilization. Motor vehicle use is permitted. Concentration of users is often high with substantial evidence of others. Resource modification and use practices are mostly dominant in a somewhat manicured environment. Standards for road, highway, and facility development are high for user convenience. Frequency of managerial contact with visitors is moderate to high.

Urban

Urban areas are managed to provide a setting that is largely modified. Large numbers of users can be expected, and vegetation cover is often exotic and manicured. Facilities for highly intensified motor vehicle use and parking are available, with mass transit often included to carry people throughout the site. The probability for encountering other individuals and groups is prevalent, as is the convenience of recreational opportunities. Experiencing natural environments and their challenges and risks is relatively unimportant. Opportunities for competitive and spectator sports are common.

Appendix F

Section 7 Correspondence with U.S. Fish & Wildlife Service

APPENDIX F

SECTION 7 CORRESPONDENCE WITH U.S. FISH & WILDLIFE SERVICE

United States Department of the Interior

TAKE PRIDE IN AMERICA

BUREAU OF LAND MANAGEMENT
Albuquerque Field Office
435 Montano Road NE
Albuquerque, New Mexico 87107-4935
www.nm.blm.gov

In Reply Refer To:
6843 (010)

July 22, 2004

Memorandum

To: State Supervisor, U.S. Fish and Wildlife Service,
New Mexico Ecological Services Office, Albuquerque, New Mexico

From: Field Manager, Albuquerque, NM

Subject: Kasha Katuwee Tent Rocks National Monument Plan/Environmental Impact Statement for the Albuquerque Field Office

As you may be aware, the Albuquerque Field Office is beginning the process of preparing Management Plan (MP) with accompanying Environmental Impact Statement (EIS) for Kasha Katuwee Tent Rocks National Monument.

As part of the Bureau of Land Management's (BLM's) responsibility under Section 7 of the Endangered Species Act, the BLM is required to request a current species list, or provide a list for your concurrence for the affected areas being evaluated. Earlier this month, Pam Herrera-Olivas of my staff, acquired a species list (dated June 28, 2004) for New Mexico by county from your office.

The BLM is requesting your concurrence that this list is the most current and should be used by our offices as the initial list for beginning preparation of the MP/EIS. This MP/EIS process is anticipated to take approximately 11 months to complete, and we will stay in contact to make sure that the species list has not changed in that time period.

If you have any questions about this matter, please contact Pam Herrera-Olivas at (505) 761-8918.

Ed Singleton,

Thomas

for Field Office Manager

United States Department of the Interior

FISH AND WILDLIFE SERVICE
New Mexico Ecological Services Field Office
2105 Osuna NE
Albuquerque, New Mexico 87113
Phone: (505) 346-2525 Fax: (505) 346-2542

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August 23, 2004

Cons. # 2-22-04-I-060

Memorandum

To: Field Office Manager, Bureau of Land Management, Albuquerque, New Mexico

From: Field Supervisor, U.S. Fish and Wildlife Service, New Mexico Ecological Services Field Office, Albuquerque, New Mexico

Subject: Kasha Katuwee Tent Rocks National Monument Plan/Environmental Impact Statement for the Albuquerque Field Office

Thank you for your July 22, 2004, memorandum requesting information on threatened or endangered species that could be affected by the proposed Management Plan for Kasha Katuwee Tent Rocks National Monument (Monument) in Sandoval County, New Mexico. The Monument is approximately 5,395 acres, located about 40 miles southwest of Santa Fe and 55 miles northeast of Albuquerque.

We have attached a current list of federally endangered, threatened, proposed, and candidate species, and species of concern that may be found in Sandoval County, New Mexico.[1] Under the Endangered Species Act, as amended (Act), it is the responsibility of the Federal action agency or its designated representative to determine if a proposed action "may affect" endangered, threatened, or proposed species, or designated critical habitat, and if so, to consult with us further. If your action area has suitable habitat for any of these species, we recommend that species-specific surveys be conducted during the flowering season for plants and at the appropriate time for wildlife to evaluate any possible project-related impacts. Please keep in mind that the scope of federally listed species compliance also includes any interrelated or interdependent project activities (e.g., equipment staging areas, offsite borrow material areas, or utility relocations) and any indirect or cumulative effects.

Candidates and species of concern have no legal protection under the Act and are included in this document for planning purposes only. We monitor the status of these species. If significant declines are detected, these species could potentially be listed as endangered or threatened.

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[1] Additional information about these species is available on the Internet at <http://nmrareplants.unm.edu>, <http://nmnhp.unm.edu/bisonm/bisonquery.php>, and <http://ifw2es.fws.gov/endangeredspecies>.

FEDERAL ENDANGERED, THREATENED, PROPOSED, AND CANDIDATE SPECIES AND SPECIES OF CONCERN IN NEW MEXICO

Consultation Number 2-22-04-1-0600

August 23, 2004

Sandoval County

ENDANGERED

- Black-footed ferret (*Mustela nigripes*)**
- Southwestern willow flycatcher (*Empidonax traillii extimus*)
- Rio Grande silvery minnow (*Hybognathus amarus*) with critical habitat

THREATENED

- Bald eagle (*Haliaeetus leucocephalus*)
- Mexican spotted owl (*Strix occidentalis lucida*) with critical habitat

CANDIDATE

- Yellow-billed cuckoo (*Coccyzus americanus*)

SPECIES OF CONCERN

- Goat Peak pika (*Ochotona princeps nigrescens*)
- New Mexican meadow jumping mouse (*Zapus hudsonius luteus*)
- Townsend's big-eared bat (*Corynorhinus townsendii*)
- American peregrine falcon (*Falco peregrinus anatum*)
- Arctic peregrine falcon (*Falco peregrinus tundrius*)
- Baird's sparrow (*Ammodramus bairdii*)
- Mountain plover (*Charadrius montanus*)
- Northern goshawk (*Accipiter gentiles*)
- Western burrowing owl (*Athene cunicularia hypugea*)
- Rio Grande cutthroat trout (*Oncorhynchus clarki virginalis*)
- Rio Grande sucker (*Catostomus plebeius*)
- Jemez Mountain salamander (*Plethodon neomexicanus*)
- New Mexico silverspot butterfly (*Speyeria nokomis nitocris*)
- San Ysidro tiger beetle (*Cicindela willistoni funaroi*)
- William Lar's tiger beetle (*Cicindela fulgida williamlarsi*)
- Gypsum phacelia (*Phacelia* sp. nov.)
- Gypsum townsendia (*Townsendia gypsophila*)
- Knight's milk-vetch (*Astragalus knightii*)
- Parish's alkali grass (*Puccinellia parishii*)

Endangered = Any species which is in danger of extinction throughout all or a significant portion of its range.

Threatened = Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

Candidate = Candidate Species (taxa for which the Service has sufficient information to propose that they be added to list of endangered and threatened species, but the listing action has been precluded by other higher priority listing activities).

Proposed = Any species of fish, wildlife or plant that is proposed in the Federal Register to be listed under section 4 of the Act.

Species of Concern = Taxa for which further biological research and field study are needed to resolve their conservation status OR are considered sensitive, rare, or declining on lists maintained by Natural Heritage Programs, State wildlife agencies, other Federal agencies, or professional/academic scientific societies. Species of Concern are included for planning purposes only.

* = Introduced population

** = Survey should be conducted if project involves impacts to prairie dog towns or complexes of 200-acres or more for the Gunnison's prairie dog (*Cynomys gunnisoni*) and/or 80-acres or more for any subspecies of Black-tailed prairie dog (*Cynomys ludovicianus*). A complex consists of two or more neighboring prairie dog towns within 4.3 miles (7 kilometers) of each other.

*** = Extirpated in this county

† = May occur in this county from re-introductions in Colorado.

Appendix G

Special-Status and Sensitive Animal Species in Sandoval County

APPENDIX G

SPECIAL-STATUS AND SENSITIVE ANIMAL SPECIES IN SANDOVAL COUNTY

Common Name	Scientific Name	Status [a]	Range & Habitat Association	Potential for Occurrence in Planning Area
			FISH	
Rio Grande cutthroat trout	*Oncorhynchus clarki virginalis*	FWS	Subspecies currently inhabits headwater areas in the Rio Grande & Pecos drainages. Found several miles up Peralta Canyon from the monument.	None. No suitable habitat
Rio Grande chub	*Gila pandora*	FS; NM-s	Occurred historically in the Rio Grande & Pecos River.	None. No suitable habitat
Rio Grande silvery minnow	*Hybognathus amarus*	FE; NM-E; FS	Inhabits variety of habitats in the Rio Grande with shifting sand or silty bottoms. Perennial stretches of the river between the Santo Domingo Pueblo (Sandoval Co.) & Socorro are critical habitat.	None. No suitable habitat
flathead chub	*Platygobio gracilis*	BLM	Occurred historically in the Rio Grande.	None. No suitable habitat
Rio Grande sucker	*Catostomus plebeius*	FWS; FS	Currently inhabits the northern portion of the Rio Grande & its tributaries.	None. No suitable habitat
			AMPHIBIANS	
Jemez Mountain salamander	*Plethodon neo-mexicanus*	NM-T	Jemez Mountains in mixed conifer habitat with abundant rotted logs & surface rocks, at elevations of 7,200-9,550 feet.	None. No suitable habitat
Northern leopard frog	*Rana pipiens*	BLM; NESL Group 2; FS	Inhabits ponds, wetland areas, riparian areas, & other semi-aquatic environments.	None. No suitable habitat
			BIRDS	
snowy egret	*Egretta thula brewsteri*	FS	Migrant known to occur throughout New Mexico in wetlands.	None. No suitable habitat
white-faced ibis	*Plegadis chihi*	BLM	Statewide migrant in New Mexico. Breeding known to occur in Rio Arriba County. Inhabits shoreline & marsh habitats that border open water; desert riparian; deciduous woodland-marsh; & grassland & agricultural lands.	None. No suitable habitat
osprey	*Pandion haliaetus carolinensis*	FS	Rare resident; more commonly a transient or migrant in the Rio Grande Valley. Habitat includes riparian forest near productive fisheries.	None. No suitable habitat

Common Name	Scientific Name	Status [a]	Range & Habitat Association	Potential for Occurrence in Planning Area
Mississippi kite	*Ictinia mississippiensis*	FS	Known to summer on golf courses & air force bases in the Roswell & Hobbs area.	None. No suitable habitat
bald eagle	*Haliaeetus leucocephalus*	FT; NM-T; NESL Group 3	Throughout the Planning Area, may be present as migrant or wintering bird. While no known nesting sites have been identified within the Planning Area, potential nesting habitat is limited to riparian habitat along the Rio Grande. Riparian areas & wetlands are primary habitat for winter roosting & during migration.	None. No suitable habitat
Northern goshawk	*Accipiter gentilis*	FWS; BLM; FS	Permanent resident of most mountain ranges in New Mexico & Wyoming. Prefer mature, closed-canopied coniferous forests of mountains & mesas. Typically found in ponderosa pine, mixed-conifer, & spruce-fir forests. Nest sites located in large trees in aged forests.	None. No suitable habitat
common black hawk	*Buteogallus anthracinus anthracinus*	NM-T; FWS; FS	Subspecies occurs primarily at lower elevations in southwestern New Mexico. However, individuals have been recorded in the middle Rio Grande Valley & have bred northward to Bernalillo Co. Nesting occurs in mature, well-developed riparian trees located near permanent streams.	None. No suitable habitat
Swainson's hawk	*Buteo swainsoni*	NESL Group 3; BLM; FS	Known to occur throughout New Mexico. Prefers mixed to short-grass habitats with scattered trees. Nests in isolated trees, often associated with riparian woodlands.	None. No suitable habitat
zone-tailed hawk	*Buteo albonotatus*	FS	Most reports of this species within New Mexico are within riparian & montane habitats.	None. No suitable habitat
ferruginous hawk	*Buteo regalis*	FWS; BLM; FS; NESL Group 3	In Wyoming this species is common & likely to be present. In New Mexico, this species occurs primarily as a rare to uncommon transient & winter migrant statewide. Breeding by this species is less common in New Mexico. Nest sites include trees, ledges, large rock outcrops, & low cliffs in sagebrush valleys & rolling grasslands.	None. No suitable habitat
American peregrine falcon	*Falco peregrinus anatum*	NM-T; FWS; BLM; NESL Group 4	In New Mexico & Wyoming, subspecies breeds locally in mountain areas & migrates statewide. Nests often located on cliff faces with overhanging ledges or rock outcrop.	None. No suitable habitat
sora	*Porzana carolina*	FS	Dependent on riparian & associated aquatic habitats.	None. No suitable habitat
whooping crane	*Grus americana*	FE; EXPN, mg; NM-E; FS	Known to migrate throughout New Mexico. Typical habitat includes marsh & wetland areas.	None. No suitable habitat

Common Name	Scientific Name	Status [a]	Range & Habitat Association	Potential for Occurrence in Planning Area
Western snowy plover	*Charadrius alexandrinus nivosus*	FS	Known to migrate & breed in New Mexico. Preferred habitats include lake shores & playas.	None. No suitable habitat
mountain plover	*Charadrius montanus*	FS; BLM; NESL Group 4	Known to occur in most counties. Inhabits flat, short-grass prairie in areas often grazed by livestock & in areas occupied by prairie dog colonies.	None. No suitable habitat
yellow-billed cuckoo	*Coccyzus americanus*	FC; BLM; NESL Group 3	Known to occur throughout Wyoming & New Mexico. Potential habitat defined as open woodlands, streamside willow & alder groves. Mature riparian woodlands along the Rio Grande may provide suitable habitat.	None. No suitable habitat
flammulated owl	*Otus flammeolus*	FS	Expected to occur in all mid-elevation pine forests west of the Black Hills.	None. No suitable habitat
Western burrowing owl	*Athene cunicularia hypugea*	FWS; BLM; FS	Summer resident in New Mexico. Typically nest in abandoned burrows of prairie dogs, ground squirrels, foxes, & badgers in grassland, open shrubland, & woodland communities.	Low. Species could occur within suitable habitats in the monument, but no prairie dog dens have been observed.
Mexican spotted owl	*Strix occidentalis lucida*	FT; NESL Group 3	In New Mexico, subspecies has been reported in a number of counties, including San Juan, Sandoval, McKinley, Bernalillo, Torrance, Lincoln, & Eddy. Found primarily in canyons, mixed conifer forests, pine-oak woodlands & riparian areas. Nests on platforms & large cavities in trees, on ledges, & in caves.	None. No suitable habitat
black swift	*Cupseloides niger borealis*	NM-s	Typically nests in shallow caves in steep canyons near waterfalls.	None. No suitable habitat
broad-billed hummingbird	*Cynanthus latirostris magicus*	NM-T; FS	In New Mexico, subspecies is a regular summer resident only in Guadalupe Canyon of southwestern NM (Hidalgo Co.). Habitats used are varied. Nesting habitat is typically riparian woodland with cottonwoods, hackberry, & sycamore at low to middle elevations.	None. No suitable habitat
belted kingfisher	*Ceryle alcyon*	FS	Known to occur along the middle Rio Grande where banks suitable for nesting & riparian habitat are present.	None. No suitable habitat

Common Name	Scientific Name	Status [a]	Range & Habitat Association	Potential for Occurrence in Planning Area
South-western willow flycatcher	*Empidonax traillii extimus*	FE; NM-E; NESL Group 2	Breeds primarily in New Mexico, Arizona, & southern California. Most records in New Mexico are from the Rio Grande Valley & westward, with the largest colony on the Gila River. Nesting habitat includes shrubs & trees in willow thickets, shrubby mountain meadows, & deciduous woodlands along streams, lakes, & bogs.	None. No suitable habitat
loggerhead shrike	*Lanius ludovicianus*	FWS; BLM	Widespread summer resident in New Mexico & Wyoming. Known to occur throughout the state. Primary habitat is open country interspersed with pastures, grasslands, & hedgerows below 9,000 feet. Nesting habitat includes sagebrush areas, desert scrub, piñon-juniper woodlands, & woodland edges.	Moderate. Species could nest within potentially suitable shrub & woodland habitats.
gray vireo	*Vireo vicinior*	NM-T	Neotropical migrant that breeds only within portions of the southwestern states. In New Mexico, has been recorded in the Guadalupe & San Andres Mtns., the San Juan River Valley, Navajo Lake, & around Santa Fe. Records for the Sandia & Manzano Mtns. are for rare transients only. Uses upland habitats in canyons, foothills, & open woodlands. Most use is within fairly open woodland savannahs.	Low. Species could occur within suitable habitats in the monument. Habitat is marginal.
gray catbird	*Dumetella carolinensis ruficrissa*	FS	Known to inhabit the lower & possibly the middle Rio Grande Valley.	Low. Species could occur within suitable habitats in the monument, which is further north than the northernmost recorded sighting.
American redstart	*Setophaga ruticilla tricolora*	FS	Neotropical migrant over-winters in mature tropical forests. Migrates through New Mexico & may nest in undisturbed woodlands. Tends to shun disturbed areas & is not likely to occur along roads.	None. No suitable habitat
Baird's sparrow	*Ammodramus bairdii*	NM-T; FWS; BLM	Grassland bird breeds in the northern Great Plains & winters in southeastern Arizona to southwestern Texas. In New Mexico & Wyoming, primarily a migrant. Uses short-grass prairie, grasslands, & weedy fields.	None. No suitable habitat
MAMMALS				
Western small-footed myotis	*Myotis ciliolabrum melanorhinus*	FWS; BLM	In New Mexico, subspecies known to occur throughout much of the state. Found in woodlands, forests, & desert communities. Known to roost in caves, abandoned buildings, under rocks, in crevices, & under pine bark. Occurs at elevations of 5,200-7,050 feet.	Low. Species could occur within suitable habitats in the monument. Habitat is marginal.

Common Name	Scientific Name	Status [a]	Range & Habitat Association	Potential for Occurrence in Planning Area
Yuma myotis	*Myotis yumanensis*	FWS; BLM	Known to occur in Sandoval, Rio Arriba, & Chaves Counties. Uncommon seasonal visitor to desert, grassland, woodland, & riparian areas at 4,000-7,000 feet. Known to roost in buildings, caves, & crevices.	Low. Species could occur within suitable habitats in the monument. Habitat is marginal
little brown myotis	*Myotis lucifugus carissima*	NM-s	Known to occur in Sandoval County. Known roost sites in buildings.	None. No suitable habitat
occult little brown bat	*Myotis lucifugus occultus*	FWS; BLM	Widely distributed throughout western & central New Mexico. Known to occur in McKinley & Sandoval Counties. Uses riparian habitats associated with permanent water sources such as streams, drainage ditches, & lakes. Also known to roost in human-built structures, caves, tunnels, & hollow trees including piñon-juniper, ponderosa pine & other conifers. Most common at higher elevations of 6,000-9,000 feet.	Low. While species migrates through lower elevations, its preferred habitats are not present in the monument.
long-legged myotis	*Myotis volans interior*	BLM; NM-s	Known to occur throughout New Mexico. Habitat is usually ponderosa pine & higher elevations.	Low. While species migrates through lower elevations, its preferred habitats are not present in the monument.
fringed myotis	*Myotis thysanodes*	FWS; BLM	Distributed throughout New Mexico except for the eastern portion of the state. Occurs in a wide variety of vegetation types, including mixed shrub, grassland, sagebrush, piñon-juniper woodland, pine & mixed conifer forests, riparian woodlands, & cropland. Known to roost in caves, mines, & buildings.	Moderate. Species could occur within suitable habitats in the monument.
long-eared myotis	*Myotis evotis*	FWS; BLM	Distributed mainly within western New Mexico. Subspecies uses piñon-juniper woodlands & coniferous forests, & roosts in caves & buildings, generally above 6,700 feet.	Moderate. Species could occur within suitable habitats in the monument.
spotted bat	*Euderma maculatum*	NM-T; BLM; FS	Known to occur in Sandoval & Rio Arriba Counties. Typical habitat includes rocky areas near perennial water & other habitats including riparian, piñon-juniper woodlands, & ponderosa pine. Roost sites include crevices or cracks in cliffs or under loose rocks.	None. No suitable habitat.

Common Name	Scientific Name	Status [a]	Range & Habitat Association	Potential for Occurrence in Planning Area
pale Townsend's big-eared bat	*Plecotus townsendii*	FWS; BLM	Subspecies fairly common in New Mexico & is known to occur in Sandoval, Rio Arriba counties. Primarily a cave dweller & is the bat most dependent upon inactive mines in the southwest. Can be found in desert shrublands, piñon-juniper woodlands, coniferous forests & mixed grass prairies. Roost in trees, caves, or human-built structures. Only subspecies of bat commonly found in New Mexico during winter.	Moderate Species could occur within suitable habitats in the monument.
big free-tailed bat	*Nyctinomops macrotis*	FWS; BLM	Known to occur in Sandoval & Rio Arriba Counties. A summer resident that prefers coniferous & mixed woods & depends on rocky cliffs for roosting. Can be found in piñon-juniper woodland, pine & mixed coniferous forests, desert grassland, & other desert communities. In addition to roosting on rocky cliffs, also may roost in caves, rock fissures, bridges, & buildings.	Moderate. Species could occur within suitable habitats in the monument.
Goat Peak pika	*Ochotona princeps nigrescens*	FWS; BLM; FS; FWS	Subpecies is confined to the Jemez Mtns. in Sandoval Co. Restricted to patches of large talus (lava) slopes & boulder fields in alpine & sub-alpine zones above 9,000 feet.	None. No suitable habitat.
Gunnison's prairie dog	*Cynomis Gunnisoni*	NM-sn	Known to occur throughout much of western New Mexico in a wide variety of habitats & elevations.	Low. No individuals have been observed, presumably because no suitable habitat exists in the monument. Soil may be too rocky. BLM will monitor for future immigration into monument.
New Mexican meadow jumping mouse	*Zapus hudsonius luteus*	NM-T; FWS; BLM; FS	Identified as occurring in Sandoval & Rio Arriba counties. Subspecies inhabits narrow grass-forb-willow streamside riparian habitat along permanent waterways & wet meadows in river floodplains.	None. No suitable habitat.
American marten	*Martes americana origenes*	NM-T, FS	Known to occur in Sandoval & Rio Arriba counties. Habitat includes spruce-fir forests & alpine habitat with an understory of fallen logs & stumps.	None. No suitable habitat.
			INVERTEBRATES	
wrinkled marshsnail	*Stagnicola caperatus*	NM-E	Known from two isolated populations in wetlands in the Bitter Lake Nat'l Wetlands Reserve & Jemez Mountains.	None. No suitable habitat.

Common Name	Scientific Name	Status [a]	Range & Habitat Association	Potential for Occurrence in Planning Area
San Ysidro mealybug	*Distichlococus fontanus*	NM-sn	Occurs only in a small area localized around San Ysidro (in Sandoval County).	None. No suitable habitat.
Socorro Mountain snail	*Oreohelix neomexicanus*	NM-sn	Occur in the vicinity of limestone cliffs in thick, moist litter derived mainly from fallen leaves of piñon pine (*Pinus edulis*), one-seeded juniper (*Juniperus monosperma*), & various shrubs.	None. No suitable habitat.
pearly checkerspot butterfly	*Charidryas acastus acastus*	FWS	A butterfly of the western U.S. east to Nebraska, & from Canada to Mexico. Has been identified as occurring in Sandoval County. Habitats include badlands near sagebrush scrub, piñon-juniper woodlands, & dry gulches. Caterpillar hosts include rabbitbrush (*Chrysothamnus viscidiflorus*) & aster (*Machaeranthera*) in the sunflower family (*Asteraceae*).	Low. Species could occur within suitable habitats in the monument. Habitat is marginal.

Note [a] Status:

BLM—BLM sensitive
FC—Federal candidate
EXPN—experimental population;
mg—Recovery/Management Plan or Cooperative Agreement
FE—Federally listed as endangered
FS—Forest Service Sensitive
FT—Federally listed as threatened
FWS—U.S. Fish & Wildlife Service species of concern

NM-E—State-listed as endangered in New Mexico
NM-s—State sensitive
NM-sn—State sensitive, & endemic
NM-T—State-listed as threatened in New Mexico

NESL—Navajo Endangered Species List
- Group 1—No longer occurs on the Navajo Nation
- Group 2—Any species or subspecies in danger of being eliminated from all or a significant portion of its range on the Navajo Nation
- Group 3—Any species or subspecies likely to become an endangered species, within the foreseeable future, throughout all or a significant portion of its range on the Navajo Nation
- Group 4—Any species or subspecies for which the Navajo Fish & Wildlife Department (NF&WD) does not currently have sufficient information to support its being listed in Group 2 or Group 3, but has reason to consider it. The NF&WD will actively seek information on these species to determine if they warrant inclusion in a different group, or removal from the list. Species in Group 4 have no legal protection under 17 NTC S 507.

NATIVE SPECIES APPARENTLY NO LONGER OCCURRING IN SANDOVAL COUNTY

black-footed ferret—*Mustela nigripes* (extirpated from NM)
gray wolf—*Canis lupus*
grizzly bear—*Ursus arctos* (extirpated from NM)
American eel—*Anguilla rostrata* (extirpated from NM)
blue sucker—*Cycleptus elongates*
freshwater drum—*Aplodinotus grunniens* (extirpated from NM)
gizzard shad—*Dorosoma cepedianum*
gray redhorse—*Moxostoma congestum*
Rio Grande bluntnose shiner—*Notropis simus simus* (extinct)
shovelnose sturgeon—*Scaphirhynchus platorynchus* (extirpated from NM)

Appendix H

Plant Species of Concern in Sandoval County

APPENDIX H

PLANT SPECIES OF CONCERN IN SANDOVAL COUNTY

Common Name	Scientific Name	Status [a]	Range & Habitat Association	Potential for Occurrence in Planning Area
grama grass cactus	*Pediocactus papyracanthus*	BLM; NESL—Group 4	In piñon-juniper woodland & desert grassland. Almost always associated w/grama grasses, especially blue grama.	Could potentially exist in the vicinity of the monument, although the habitat is not ideal. Prefers gypsum soils, which do not occur in the monument. Surveys conducted by the NMHP [a] in 2001-03 failed to locate any plants, & it is doubtful any will be identified in the future.
Parish's alkali grass	*Pucinella parishii*	BLM; FS; FWS; NM-E; NESL—Group 2	Habitat includes alkaline springs, seeps, & seasonally wet areas (cienegas) that occur @ the head of drainages or on gentle slopes @ elevations of 2,600-7,200 ft.; requires continuously damp soils during its late winter to spring growing season.	None. No suitable habitat in monument.
Knight's milkvetch	*Astraglus knightii*	BLM; FWS	Mesa Prieta; Rimrock ledges of Dakota Formation sandstone substrate in Great Basin conifer & piñon-juniper woodlands & @ elevations of 5,500-7,500 ft.	None. No suitable habitat in monument.
Plank's campion (or Plank's catchfly)	*Silene plankii*	BLM	Includes igneous cliffs & rocky outcrops @ elevations of 5,000-8,000 ft.; restricted to mountains near the Rio Grande.	None. No suitable habitat in monument.
Gypsum phacelia	*Phacelia sp. Nov.*	FWS	Weathered gypsum outcrops & gypsiferous & pure gypsum soils in Great Basin conifer woodland @ elevations of 5,500-7,500 ft., & in Great Basin desert scrub. Species is highly habitat specific.	None. No suitable habitat in monument.
Gypsum townsendii	*Townsendia gypsophilia*	BLM; FWS	Weathered gypsum outcrops & gypsiferous & pure gypsum soils in Great Basin conifer woodland @ elevations of 5,500-7,500 ft., & in Great Basin desert scrub. Species is highly habitat specific.	None. No suitable habitat in monument.
tufted sand verbena	*Abronia bigelovii*	NM-s	Populations are usually small & restricted to gypsum or strongly gypsiferous soils derived from gypsum outcrops. Plants are conspicuous on the otherwise rather barren gypsum. Although locally rather common, they do not form dense populations.	None. No suitable habitat in monument.

Common Name	Scientific Name	Status [a]	Range & Habitat Association	Potential for Occurrence in Planning Area
Santa Fe milkvetch	*Astragalus feensis*	NM-s	Sandy benches & gravelly hillsides in piñon-juniper woodland or plains-mesa grassland @ 5,100-6,100 ft.	Could potentially exist in the vicinity of monument, although the habitat is not ideal. Surveys conducted by the NMHP in 2001-03 failed to locate any plants; however, the area will continue to be monitored for this species.
La Jolla prairie clover	*Dalea scariosa*	NM-s	Open sandy clay banks & bluffs, often along roadsides, @ about 4,750-4,900 ft.	Could potentially exist in the vicinity of monument, although the habitat is not ideal. Monument is higher in elevation than that at which this plant normally grows, & lacks clay soil in which it grows. Surveys conducted by the NMHP in 2001-03 failed to locate any plants, & it is doubtful any will be identified in the future.
Wahatoya Creek larkspur	*Delphinium robustum*	FS	Canyon bottoms & aspen groves in lower & upper montane coniferous forest @ 7,200-11,200 ft.	None. No suitable habitat in monument.
Sapello Canyon larkspur	*Delphinium sapellonis*	NM-s	Canyon bottoms & aspen groves in lower & upper montane coniferous forest @ 8,000-11,500 ft.	None. No suitable habitat in monument.
New Mexico stickseed	*Hackelia hirsuta*	NMHP	Dry sites of shaly or igneous soils in lower to upper montane coniferous forest, usually w/Gambel oak @ 7,700-10,200 ft.	None. No suitable habitat in monument.
Sandia alumroot	*Heuchera pulchella*	NM-s	Limestone cliffs in lower & upper montane coniferous forest @ 8,000-10,700 ft.	None. No suitable habitat in monument.
Springer's blazingstar	*Mentzelia springeri*	NM-s	Volcanic pumice & unconsolidated pyroclastic ash in piñon-juniper woodland & lower montane coniferous forest @ 7,000-8,000 ft. Species is narrowly endemic to the loose volcanic substrates of the Jemez Mtns. & is often seen where roads cut though pumice.	Could potentially exist in the vicinity of monument, although the habitat is not ideal. Monument is on the lower borderline in elevation for species. Surveys conducted by the NMHP in 2001-03 failed to locate any plants; however, the area will continue to be monitored for this species.

Note: [a] Status: BLM—BLM sensitive; FS—U.S. Forest Service sensitive; FWS—U.S. Fish & Wildlife Service species of concern; NMHP—New Mexico Heritage Program; NM-s—State sensitive; NESL—Navajo Endangered Species List [Group 2—Any species or subspecies in danger of being eliminated from all or a significant portion of its range on the Navajo Nation; Group 4—Any species or subspecies for which the Navajo Fish & Wildlife Dept. (NF&WD) does not currently have sufficient information to support its being listed in Group 2 or 3, but has reason to consider it. The NF&WD will actively seek information on these species to determine if they warrant inclusion in a different group, or removal from the list. Species in Group 4 have no legal protection under 17 NTC S 507.].

Appendix I

Wild & Scenic River Evaluation for Kasha-Katuwe Tent Rocks National Monument

APPENDIX I

WILD AND SCENIC RIVER EVALUATION FOR KASHA-KATUWE TENT ROCKS NATIONAL MONUMENT PLANNING AREA

BLM planning guidance suggests that Wild and Scenic River studies be conducted for waterways within a planning area. The studies begin with a determination of eligibility. The eligibility study simply determines whether the river or segment of river should be carried forward into the classification and suitability phases of the study.

Through its planning process, the BLM is assessing those river segments contained within BLM-administered public lands in the Planning Area. The Peralta Canyon stream channel located within the Kasha-Katuwe Tent Rocks National Monument and extending through the Planning Area has been assessed to see if it is worthy for inclusion in the Wild and Scenic River System.

To be eligible for designation, a river or segment must be free-flowing and contain one or more outstandingly remarkable values. Free-flowing is defined as existing or flowing in a natural condition without impoundment, diversion, straightening, riprapping or other modifications of the waterway that would encourage future construction of such structures. As a general rule, the water course should contain regular and predictable flows (even though intermittent, seasonal or interrupted). A segment should not be ephemeral (with a flow lasting only a few days out of the year).

Outstandingly remarkable values are defined as natural and cultural values, such as scenic, recreational, geologic, fish habitat, wildlife, historic, cultural or other similar values, that are either unique at the regional level or exemplary at the national level. To qualify as an outstandingly remarkable value, that value should be located in the river segment or on its immediate shoreline, contribute substantially to the functioning of the river ecosystem, and/or owe its location or existence to the presence of the river.

A general inventory of the existing public lands within the Planning Area has found no free-flowing perennial streams, springs, or seeps. Waterflows within the Peralta Canyon stream channel may occur at any time of the year as a result of summertime thunderstorms, melting snow or frontal system rainfall. Following rainstorms, streamflow for brief durations is characteristic. Peralta Canyon may experience longer periods of flow from snowmelt runoff from the higher terrain surrounding the Monument.

Based upon the free-flowing criteria, no segment of the Peralta Canyon stream channel nor any other drainage extending through public lands within the Planning Area is determined to be eligible. At this time neither the Peralta Canyon stream channel nor its immediate shoreline on public lands within the Monument appears to possess any outstandingly remarkable values.

In investigating public land within the Planning Area, the BLM has found no river or segment that meets the eligibility criteria as defined in the Wild and Scenic Rivers Act for inclusion as a component of the National Wild and Scenic Rivers System.

Appendix J

Vegetative Treatments and Fire Management

APPENDIX J

VEGETATION TREATMENTS AND FIRE MANAGEMENT IN THE KASHA-KATUWE TENT ROCKS NATIONAL MONUMENT AND PLANNING AREA

Major Land Resource Area

The project area covered under this RMP has been characterized by the Natural Resources Conservation Service (NRCS) as Major Land Resource Area (MLRA) No. 36; Western Plateau, subresource area WP-2, New Mexico and Arizona Plateaus and Mesas. It consists of broad mesas and plateaus interspersed with numerous deep canyons and dry washes, mesa breaks, and canyon walls. Scattered throughout the region are isolated volcanic peaks, cones and lava flows.

This area is characterized as semi-arid, with distinct seasonal precipitation and temperature patterns associated with a continental climate. Average annual precipitation approaches 10-16 inches. Most of the precipitation comes in the form of local high-intensity summer storms of short duration. Such storms occur when warm, moist Gulf air moves inland and becomes unstable over the hot terrain, causing thundershowers. These usually occur in the late afternoon. A secondary peak in precipitation comes in the form of snow and rain/snow mix that occurs in late winter and early spring. Season, quantity, frequency, and intensity of precipitation typically vary greatly from place to place and from year to year. What precipitation does fall can be quite effective for vegetative response because it occurs during much of the growing season (April to October). The natural vegetation has, of course, evolved under these conditions, and the erratic precipitation pattern is the predictable norm (Dick-Peddie, 1993).

Vegetation and Fire Regime

Climate, vegetation and fire are frequently considered together in land use planning and environmental analysis. This is because climate (e.g., temperature, precipitation, solar degree days and growing season) is the major determinant of vegetation patterns, while fire is a component of the natural ecological processes that supports, maintains and/or alters a given plant community.

Generally, vegetation changes on an available moisture gradient (lower to higher) as follows: scrubland to grassland to woodland to forest. Moisture availability is considered to be moisture available to plants for their establishment and maintenance. Available moisture is considered to be moisture which is free to enter the plant roots. This available moisture was recognized by Watson in 1912 as the primary factor influencing vegetation patterns when he wrote, "The chief factor determining this change is moisture, the supply of which is largely determined by precipitation, ability to hold it, and protection from drying winds and sun . . . Temperature and available moisture together are considered primary factors producing vegetation patterns. Other features that singly or in combination affect these two primary factors are thought of as secondary. Secondary factors affecting moisture availability are elevation, annual and seasonal precipitation, evaporation rates, soil texture and structure, slope, exposure (aspect), salinity and season" (Dick-Peddie, 1993).

The potential natural plant communities and associated vegetation within the Monument are highly diverse as a result of the variability of soils, elevation, annual and seasonal precipitation, temperature, degree of slope and aspect, and disturbance. Annual precipitation comes primarily in the form of rainfall during the months of July, August, and September, although wintertime precipitation in the form of snow, sleet, or rain is sometimes significant. The rainfall patterns generally favor warm-season perennial vegetation, while the temperature regime tends to favor cool-season vegetation. This creates a complex community of plants on any given ecological site, which is quite susceptible to disturbance and is at or near its productive potential only when both the natural warm and cool-season dominates are present.

Soils described in the Sandoval County Soil Survey (updated in 1992-93) by the NRCS are assigned management potentials under two broad interpretations, Rangeland and Woodlands. The soils occurring within the Monument and their management potential are listed below.

MUSYM Map Unit Symbol	Soils Description	% Slopes	Management Potential	Acres
52	Totavi loamy sand	0-5	Woodland	35
104	Cochiti-Montecito association	1-30	Woodland	1,022
206	Pinitos loam	1-15	Woodland	58
300	Waumac (50%)-Bamac (30%) association	1-7	Rangeland	485
307	Flugle (60%)-Waumac (25%) complex	1-8	Rangeland	460
345	Espiritu (50%)-Bamac (35%) association	15-55	Rangeland	246
353	Cochiti-Espiritu association	15-55	Woodland	2,226
603	Laventana-Mirand very cobbly loam	15-55	Woodland	94
			Total	4,626

The management potentials (Rangeland/ Woodland) are further broken down into site specific descriptions and productivity, **based on a soil's capability to support and maintain the potential natural plant community** structure and function.

Within the rangeland capabilities are three range sites, described as "Sandy," "Savannah," and "Foothills" Ecological Site Descriptions (ESDs). These are located in valleys, mesa tops and at the base of steep slopes, respectively. These sites normal occur on gently to moderately sloping topography that may range as high as 15 percent slope but average less than 10 percent. The soils forming the three rangeland sites are found as associations or complexes that often produce indistinct boundaries between one ESD and another. Rangeland site productivity is measured in pounds air dry forage per acre (lbs /Ac) and is presented as a range for each ecological site under unfavorable and favorable growing conditions. Grazing capacities of rangeland is determined based on the site's current potential to produce forage balanced against a desired amount of residual vegetation/stubble heights for watershed protection and the proper amount of forage to be harvested by grazing ungulates.

The Woodlands are described by indicator species with their productivity measured by Site Index (SI) and/or in cubic feet per ac (cuft/ac). The indicator species is the species that is common in the area and is generally, but not necessarily, the most productive on the soil. Site index is the average height, in feet, that the trees attain in a specified number of years. This index applies to fully stocked, even-aged, unmanaged stands. Site indexes shown in the table are average based on measurements made at sites that are representative of the soil series and where the site has been free of past fire and disturbances. For non-timber species, such as oneseed juniper and Utah juniper, productivity is a measure of fiber (wood) in cubic feet per acre (cuft/ac).

The Monument has approximately 512 acres (9 percent) with slopes greater than 60 percent; these have little potential to support vegetation due to the steep slopes and shallow soils. Areas that are less than 60 percent slope are comprised of woodlands and forest and as percent slope

MUSYM Map Unit Symbol	Management Potential	Indicator Species Site Descriptions	Site Productivity SI :: cuft/Ac, or lbs (air dry forage)/Ac	Trees to Manage
52	Woodland	Utah juniper Oneseed juniper Ponderosa pine	SI 75 :: 57 cuft /Ac	-- -- Ponderosa pine
104	Woodland	Oneseed juniper Two-needle piñon	SI 34 :: 14 cuft /Ac SI 51	-- --
206	Woodland	Oneseed juniper Two needle piñon	SI 45	-- Two-needle piñon
300	Rangeland	Sandy	325-860 lbs /Ac	--
307	Rangeland	Sandy Savannah	325-860 lbs /Ac 300-875 lbs /Ac	-- --
345	Rangeland	Foothills	375-750 lbs /Ac	--
353	Woodland	Oneseed juniper Two-needle piñon	SI 25-51	-- --
603	Woodland	Ponderosa pine	SI 55-76 :: 43-57 cuft	Ponderosa pine

decreases the lands potential natural plant community moves toward a grass/shrub community.

Vegetation forms the basis for describing plant community structure and function. **Fire** is a component of the natural ecological processes that supports, maintains and/or alters a given plant community. Ecological site descriptions (ESD) developed by the NRCS are used to portray rangeland plant community structure, whereas, fire regimes are used to classify the role fire played across the landscape. **The presence of vegetation (fuels) is essential for fire to occur.** Fire Regimes and Fire Regime Condition Classes (FRCC) are used to broadly describe the fire frequency (average number of years between fires) and severity (amount of replacement) that may occur on dominate overstory vegetation and the amount of departure from the natural fire regime.

The **potential natural plant community** of woodlands and forest stands within the Monument as described by the Sandoval County Soil Survey (NRCS) portray the landscape as 70 percent piñon-juniper woodlands and 2 percent ponderosa pine forests, while the remaining 28 percent of the Monument consists of grass/shrub rangeland communities. On the basis of local fire history information (Allen 2002), the young ages of most piñon-juniper trees of the Pajarito Plateau located near Los Alamos, NM (Julius 1999, unpublished data), and soils data (McFadden 1996), leads us to believe that many upland mesa areas now occupied by dense piñon-juniper woodlands were formerly more open, with fewer trees and well-developed herbaceous understories that: (1) protected the soil from excessive erosion during intense summer thunderstorm events, and (2) provided a largely continuous fuel matrix, which allowed surface fires to spread and maintain these vegetative types.

Shifts may occur in plant community dominance, structure and function under natural disturbance. These natural disturbances; fire, drought and insects play a vital role in plant community dynamics and development of vegetation patterns. Other human-induced disturbances; logging, livestock grazing and fire suppression may also encourage changes in plant community structure and function. The following illustrates the effects to the potential natural plant communities from human-induced disturbance.

Settlement and the introduction of domestic livestock into the Rio Grande Valley by Euro-Americans began in 1598; however, significant livestock grazing did not occur until after the railroads linked the Southwest to commercial markets in the 1880's. Millions of sheep and cattle were placed onto the New Mexico landscape at that time, with unrestricted grazing on public lands. Sharp reductions in the herbaceous ground cover and associated litter resulted, effectively suppressing previously widespread surface fires (coupled with institutionalized fire suppression initiated by the federal government after 1910). Severe drought during the 1950s contributed to declines in ground cover (Allen and Breshears, 1998). Fire-sensitive piñon and juniper trees became established in densities unprecedented for at least the past 800 years. As these trees grew, they became increasingly effective competitors for water and nutrients. Thus a positive feedback cycle was initiated that favors tree invasion and decreased herbaceous ground cover. (Allen 1989: 246-251, Gottfried et al. 1995).

Arnold 1950, Cooper 1960, Madany and West 1983, Mitchell and Freeman 1993, Rummell 1951, Savage and Swetnam 1994, have identified livestock grazing as a major cause in altering the historical fire regimes and increasing fire hazard. Past grazing of the low growing, continuous fine fuel by livestock displaced the herbaceous plant community with brush and piñon-juniper. The loss of herbaceous ground fuels inhibits the occurrence of low intensity surface fires and fire spread that could control the ensuing brush and tree encroachment. The resulting increase in brush and tree densities supports destructive crown fires.

Shifts in the potential natural plant communities on the Monument are reflected in recent woodland inventories that record a striking departure in expected specie composition. Fixed 1/20th acre plots done within the rangeland and woodland sites in 2004 reveal that 60 percent of the stems are less than 4 inches in diameter and less than 100 years of age. The average stem density is 353 per acre from a range of 60 to 720 stems per acre. This represents an average spacing of 11 feet. These sites are dominated by oneseed juniper at 70 percent, followed by piñon at 30 percent (David Borland, 2004). The expected natural plant community of the piñon-juniper woodlands on the monument should be around 60 to 100 stems per acre.

These changes in vegetation patterns appear to be the result of differential accumulation of available moisture. Whereby, man induced disturbance, livestock grazing and fire suppression resulted in reducing the herbaceous cover. The exposed bare ground increased allowing rain water to flow across the interspaces rather than infiltrate where it fell. The water than accumulated in small depressions that provided more water than normal under grass cover so that junipers could become established (Dick-Peddie 1993).

Prevailing natural disturbance of drought and insects continue to dramatically influence the present condition of the vegetative communities within the Monument. Drought conditions have been acknowledged from 1994-95 to present by meteorologists/climatologists throughout the southwest. This regional drought has caused trees to become moisture stressed and susceptible to insect invasion and damage. As drought progressed, trees became unable to repel the piñon-bark (*Ips*) beetle with tree pitch. Insect populations of the Ips beetle have exploded permitting them to move onto adjoining trees and woodlands. The smaller encroaching trees, less than 3 inches in diameter, are passed up by the *Ips* beetle, however, the older and larger trees are highly susceptible to their damage that eventually results in the tree's death. The extent of this outbreak within the monument is obvious where on the average 88 piñon trees per acre are dead from the *Ips* beetle (Borland, 2004).

Fire Regime Condition Class (FRCC) is "a function of the degree of departure from historical fire regimes resulting in alterations of key ecosystem components such as species composition, structural stage, stand age, and canopy closure. One or more of the following activities may have caused this departure: fire exclusion, timber harvesting, grazing, introduction and establishment of exotic species, insects and disease (introduced or native), or other pests management activities" (Schmidt et al, 2001). Fire Regime Condition Class 1 is characterized as being within the natural (historical) range of variability for vegetation structure and function; fuel composition; fire frequency, severity and pattern; and other associated disturbances.

The following ecological sites, from the Sandoval County soil mapping unit(s) Sandy, Savannah and Foothills, describe the potential natural vegetation that would occur on the rangeland component of the Monument. The Statewide RMP amendment, *Fire and Fuels Resource Management Plan Amendment for New Mexico and Texas Environmental Assessment* (April 2004—Table 3.4 and Appendix A.3) also describe the Fire Regime Condition Classes for the vegetative communities or plant associations; Open Conifer Woodlands, Closed Conifer Woodlands and Chihuahuan Desert Grasslands that occur on the Monument.

Sandy ecological sites are characterized by the NRCS as both warm and cool-season grasses, scattered shrubs, half-shrubs, and forbs. Blue grama and western wheatgrass are co-dominates, with Indian ricegrass and dropseed closely associated. Principal shrubs and half-shrubs include four-wing saltbush, winterfat, and sand sagebrush. Rocky Mountain beeplant is often the most noticeable forb. Broom snakeweed is most common in certain wet year and when the plant community deteriorates from its potential. Potential natural plant communities have about 69 percent bare ground, 12 percent litter, 15 percent grasses and forbs as an average percent of the surface area. The overstory is 5 percent shrubs and half-shrubs with 0 percent tree canopy. Under unfavorable growing conditions, the historical potential plant community could produce 325 lbs per acre air dry plant matter while during favorable conditions the site's potential increases to 850 lbs per acre air dry plant matter. The Sandy ecological site fits the Chihuahuan Desert Grassland fire regime classification; however, recent disturbance to the plant community structure and the increasing number and density of shrubs and trees creates a grading effect into several fire regimes (Open and Closed Conifer Woodlands). Fire frequency is variable and dependent upon plant community development and/or departure from the historical community and ignition source. Grassland types support fires and could occur in any given year provided the grasses are cured and dry enough to burn. Plant density is a critical factor in the grassland's ability to propagate fire. Heat output is relatively low from grass fuels, so fairly continuous fuels are necessary for fire spread to occur (Brown et al.). The current fire frequency is between 85 and 120 years due to the age of the larger size trees and recent fire suppression. Historical fire frequencies probably ranged from about 4 to 20 years (Fire Regime II).

Savannah ecological sites are characterized by the NRCS as scattered large tree-type piñon and/or juniper with open grass stands in between. Understory grasses are dominated by blue grama, Western wheatgrass, Indian ricegrass, and sand dropseed. Piñon ricegrass and pine dropseed may also be found, usually beneath the trees and at the higher elevation ranges on the site. Winterfat and some forbs may occur in significant amounts. Broom snakeweed is most common in certain good rainfall years and when the understory plant community deteriorates from its potential. Reproduction of piñon pine and juniper is normally very slow and, historically, may have been controlled by natural fire. Tree canopy of the natural potential plant community averages approximately 25 percent. In exceptional cases, a few more or less even-aged ponderosa pines may occur on this site naturally. Reproduction of this species is ordinarily even less evident than that of piñon or juniper, and no more than 1 or 2 percent of the understory is likely to be made up of pine seedlings, even in the absence of livestock grazing. Historical plant communities have about 65 percent bare ground, 15 percent litter, 18 percent grasses and forbs as an average percent of the surface area. The overstory is 15-30 percent shrubs and half-shrubs and 15-30 percent tree canopy. Under unfavorable growing conditions, the historical potential plant community could produce 300 lbs per acre air dry plant matter while favorable growing conditions improves the site's potential to 875 lbs per acre air dry plant matter.

Foothills ecological sites are characterized by the NRCS as a mixed shrub-grassland aspect with scattered oneseed juniper and some piñon pine trees. The tree component is more prevalent on the cooler, north facing slopes, while shrubs and grasses prevail on south- and west-facing slopes. Dominant grasses on the north-facing slopes are blue grama, galleta, New Mexico feathergrass, and bottlebrush squirreltail. On the south-facing slopes black grama, little bluestem, sideoats grama, and blue grama are dominant. This site occurs as rolling to steep hills and foot slopes of steep mountains and side-slopes of high mesas. Slopes may range form 2 to 50 percent. This is a transitional area between adjoining Major Land Resource Areas (MLRA) SD-1 and WP-2 as a product of the highly variable soils, slopes and exposures. Historical plant communities have about 33 percent bare ground, 10 percent litter, 12 percent grasses and forbs as an average percent of the surface area. The overstory is about 20 percent shrubs and half-shrubs and 20 percent tree canopy. Under unfavorable growing conditions, the historical potential plant community could produce 375 lbs per acre air dry plant matter while favorable growing conditions raises the site's potential to 750 lbs per acre air dry plant matter.

Historically the fire regime occurring on the Foothills and Savannah ecological sites was one of frequent mixed severity fires (Fire Regime I and II). Typically fires occurring on these sites consisted of low intensity surface fires with occasionally high intensity stand replacing fires occurred when higher fuel concentrations were present. The average historical fire return interval is about 28 to 31 years, with a range of 10 to 49 years. These sites are now dominated by piñon-juniper with a grass/forb and shrub understory. The current plant communities fall into the Open and Closed Conifer Woodlands fire regimes. The herbaceous understory is discontinuous and of low productivity, coupled with the small amounts of litter, the number, age and size of tree(s) that are present place the current fire frequency between 85 and 120 years.

Vegetative response is tied closely to changes in soil structure, function and their (soil) productivity. The loss of organic-rich topsoils, decreased plant-available-water (Breshears and Barnes 1999), extreme soil temperatures, and freeze-thaw activity severely impede herbaceous vegetation establishment and productivity (Davenport et al. 1998). Reductions in ground cover cause increased runoff from summer thunderstorms (Reid et al. 1999), with associated increases in erosion (Wilcox et al. 1996a, b, in press). These processes, described above, have moved much of the historical natural potential vegetation on the Monument across a plant community threshold that currently favors further establishment and maintenance of oneseed junipers and piñon pine. Successful restoration of the rangelands on the monument to historical natural plant communities is directly proportional to the site's retention of topsoil. Areas that have experienced severe loss of the organic topsoil would exhibit a slower response to vegetative treatments and prescriptions than similar areas containing higher amounts of topsoil in the system.

Strategies for any vegetative treatments should address the need to minimize any further surface disturbance and/or transport of soils off- site. Treatments geared for the reduction of oneseed juniper and piñon pine stems should include lopping and scattering of smaller diameter stems and branches to provide suitable micro-climate for seed germination, establishment and survival of seedlings from grazing. It is uncertain whether an adequate native seed bank is present to move the treated sites toward their natural potential plant community. The native seed bank is stored in the soil and it presence and abundance would be proportional to the degree of soil loss. To encourage the desired restoration of the treated areas, vegetative strategies should include re-seeding with native seeds.

Appendix K

Resource Management Plan Protest Critical Item Checklist

Resource Management Plan Protest
Critical Item Checklist

The following items *must* be included to constitute a valid protest whether using this optional format, or a narrative letter.

(43 CFR 1610.5-2)

BLM s practice is to make comments, including names and home addresses of respondents, available for public review. Individual respondents may request that we withhold their names and or home addresses, but if you wish us to consider withholding this information, you must state this prominently at the beginning of your comments. In addition, you must present a rationale for withholding this information. This rationale must demonstrate that disclosure would constitute an unwarranted invasion of privacy. Unsupported assertions will not meet this burden. In the absence of exceptional, documentable circumstances, this information will be released.

Resource Management Plan (RMP) or Amendment (RMPA) being protested:

Name:
Address:
Phone Number: ( )

Your interest in filing this protest (how will you be adversely affected by the approval or amendment of this plan?):

Issue or issues being protested:

Statement of the part or parts of the plan being protested:

Chapter:
Section:
Page:
(or) Map:

Attach copies of all documents addressing the issue(s) that were submitted during the planning process by the protesting party, OR an indication of the date the issue(s) were discussed for the record.
Date(s):

A concise statement explaining why the State Director s decisions is believed to be wrong:

Appendix A&A

Acronyms & Abbreviations

ACRONYMS AND ABBREVIATIONS

ADO	Albuquerque District Office
AUM	animal unit month
BLM	Bureau of Land Management
CFR	Code of Federal Regulations
CR	County Road
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FLPMA	Federal Land Policy and Management Act
FR	Federal Register
FS, USFS	U.S. Forest Service
FWS	U.S. Fish & Wildlife Service
NEPA	National Environmental Policy Act
NM	New Mexico
NMDG&F	New Mexico Department of Game & Fish
NPS	National Park Service
OHV	off-highway vehicle
R.	Range
RMP	Resource Management Plan
RN	roaded natural (recreation opportunity)
ROS	Recreation Opportunity Spectrum
RPFO	Rio Puerco Field Office
Sec.	Section
SPM	semi-primitive motorized (recreation opportunity)
SPNM	semi-primitive non-motorized (recreation opportunity)

SR	State Road
SRP	Special Recreation Permit
T.	Township
T&E	threatened and endangered (plant or animal species)
USC	United States Code
USDA	U.S. Department of Agriculture
USDI	U.S. Department of the Interior
VRM	visual resource management
WSA	wilderness study area

GLOSSARY

alluvium	Unconsolidated material (i.e., gravel, sand, silt, clay, and various mixtures of these) derived from rock or mineral fragments that have been eroded and transported from their place of origin, then deposited by running water on the land surface
andesite	An igneous, volcanic rock, usually having a dark-colored, fine-grained groundmass with larger crystals embedded therein
authorized user	A person or entity (including a BLM staff member) with formally approved access to a BLM road as granted by law, a livestock grazing permit, an oil and gas lease, a right-of-way grant, or other use agreement. Under the BLM Roads Policy (Instruction Memorandum No. NM-95-031), the term does not apply to the general public.
caldera	A large, basin-shaped volcanic depression, more or less circular, the diameter of which is many times greater than that of the included volcanic vent or vents.
cavate	Applies to an opening cut into soft rock
collector road	A BLM road that usually provides primary access to large blocks of lands and connects with, or is an extension of, a public road system
colluvium	Unconsolidated, unsorted earth material that is transported or deposited on sideslopes and/or at the base of slopes by mass movement (e.g., that caused by gravity) and by local unconcentrated runoff
cuesta	An asymmetric ridge capped by resistant rock layers of slight to moderate dip (less than 10 degrees or 16 percent), mainly in one direction, that is produced by differential erosion of interbedded resistant and softer rocks
detritus	Material produced by the disintegration and weathering of rocks, which has been moved from its site of origin
easement	An authorization for a non-possessory, nonexclusive interest in lands that is usually granted for a specific use. This authorization specifies the rights of the holder and the obligation of the BLM to use and manage the lands in a manner consistent with certain terms.
eolian	Pertaining to earth materials (e.g., dune sands, sand sheets, clay) transported and deposited by the wind
extrusive	Said of igneous rock that has been ejected onto the earth's surface

fan	A gently sloping mass of earth debris that forms a section of a low-angle cone, commonly at a place in which a notable decrease in gradient occurs. Specifically, an alluvial fan.
feldspar	One of a group of abundant rock-forming minerals that are silicates of aluminum with potassium, sodium, and calcium, and rarely barium. Feldspars are the most widespread of any mineral group and constitute 60 percent of the earth's crust, occurring in all types of rock
gabion	A hollow cylinder of wickerwork, strap iron, or wire (similar to a basket with no bottom) that is filled with earth or stones and sunk to assist in forming a dike
habituation	The process of making accustomed; as used regarding wildlife, this is the process of wildlife species becoming accustomed to human presence in or near their habitat
hibernaculum	A shelter occupied during winter by dormant animals, usually with a characteristic structure for each species
inholding	A term used to refer to non-federally owned lands and interests in lands within the monument boundary. Presidential Proclamation 7394 reserved these as part of the Monument upon acquisition of title by the United States. These lands contain resources similar or complementary to those values the Monument was established to protect, and the Monument can be more effectively managed in conjunction with these inholdings. These areas are desirable and recommended for acquisition. Therefore, this RMP/EIS contains analysis of the inholding resources to the extent that they are known.
jacal	A wall made with upright poles or sticks, then covered and chinked with mud or clay
Monument	The term used to refer to a land area encompassing approximately 5,402 acres, established under Presidential Proclamation 7394 as the Kasha-Katuwe Tent Rocks National Monument. Only part of this acreage is federally owned and managed by the BLM (4,124 federal and 1,278 inholding surface acres; 4,565 federal and 837 inholding mineral acres; obviously, surface and mineral ownership acreages do not always correspond). Details of land ownership are shown in Table 1-1 and on Map 3. Land use decisions considered in and established through this plan may include management measures that the BLM has applied to federal and non-federal acres to do environmental analysis; these also may be identified as the BLM's preferred management measures. These decisions/measures can only be implemented where the lands are (1) federally owned (acquired by sale or exchange from willing property owners), or (2) where the BLM has negotiated legal management agreements with property owners willing to cooperate.

North Edgeholding	The term used to refer to the non-federally owned lands and interest in lands a part of which adjoins the north monument boundary [9,268 acres surface and part of the minerals (gold, silver and quicksilver/mercury)]. These lands contain resources similar or complementary to those values the Monument was established to protect, and the Monument can be more effectively managed in conjunction with this edgeholding. This area is desirable and recommended for acquisition. Therefore, this RMP/EIS contains analysis of the inholding resources to the extent that they are known. [Note: This area has also been referred to as the Cañada de Cochiti Grant, the York Ranch, or the University of New Mexico (UNM) property.]
obsidian	A black or dark-colored volcanic glass
off-highway vehicle	Any motorized vehicle capable of, or designed for, travel on or immediately over land, water, or other natural terrain; the term includes off-road vehicles but is broader.
perlite	A volcanic glass with the composition of rhyolite, and having numerous concentric cracks that give rise to perlitic structure
phenocrysts	Relatively large, conspicuous crystals in a porphyritic rock
Planning Area	The term used to refer to federal and non-federal lands and interests in lands considered in the land use decisions and related environmental analysis of this RMP/EIS. These lands and interests in lands include (1) the Monument (5,402 surface acres, including 4,124 federal acres and 1,278 acres of non-federal inholdings; mineral ownership is 4,565 federal acres and 837 acres non-federal inholdings); (2) the Southwest Acquisition (965 federal acres, both surface and minerals); (3) the North Edgeholding (9,268 acres surface and minerals other than gold, silver and quicksilver/mercury), and (4) other valid existing rights. The Planning Area totals 15,635 acres.
porphyritic	A textural term for those igneous rocks in which larger crystals (phenocrysts) are set in a finer groundmass
primitive road	A BLM two-track road that has been created by vehicle traffic and does not require engineering standards. Some are cross country and receive little use, while others are regularly traveled.
pumice	A glassy rock having the composition of rhyolite, and characterized by numerous small cavities presenting a spongy appearance
pyroclastic	A general term applied to detrital volcanic materials that have been explosively or aerially ejected from a volcanic vent.
resource road	A BLM road for authorized users that provides point access and connects to a local road that serves a smaller area

"retire" livestock grazing	Presidential Proclamation 7394 states, " . . . The Secretary of the Interior shall retire the portion of the grazing allotments within the monument, pursuant to applicable law . . ." It is unclear what the word "retire" means in this case, as it is not a term typically used in relation to grazing, allotments, leases or permits. At first reading, the term could imply "cancellation," which means "a permanent termination of a grazing permit . . . lease . . . or other grazing authorization . . ." (43 CFR Subpart 4100.0-5). However, the proclamation continues, " . . . unless livestock grazing will advance the purposes of the proclamation." Based on this statement, "retire" could refer to a "suspension," meaning "the temporary withholding from active use, through a decision issued by the authorized officer or by agreement, of part or all of the permitted use in a grazing permit or lease" (*ibid.*). The terms "discontinued," "retired," "cancelled," and "suspended" may appear in this document and related material. These terms mean that the permitting of grazing on the Monument's grazing allotments is to be discontinued unless it advances the purposes of Proclamation 7394. Ways in which grazing may serve these purposes are suggested in the document.
rhyolite	Describes a group of extrusive igneous rocks composed of phenocrysts of quartz and alkali feldspar; the extrusive equivalent of granite
right-of-way	The legal right to cross the lands of another; the strip of land for a road, railroad or power line
Southwest Acquisition	The term used to refer to a 965-acre parcel of land recently acquired by the federal government and now managed by the BLM. Decisions made in this plan can be implemented for this parcel. (Note: This parcel was referred to in the Draft RMP/EIS as the "southwest edgeholding.")
subsoil	Roughly, the part of the soil that lies below plow depth
substratum	Any layer, excluding bedrock, that lies below the surface and/or subsoil and that (1) has been little affected by soil development processes, and (2) lacks properties of the overlying layers
terrace	A step-like surface that borders a valley floor and represents the former position of a floodplain, lake or seashore
tuff	A rock composed of compacted volcanic fragments, generally smaller than 4 millimeters in diameter

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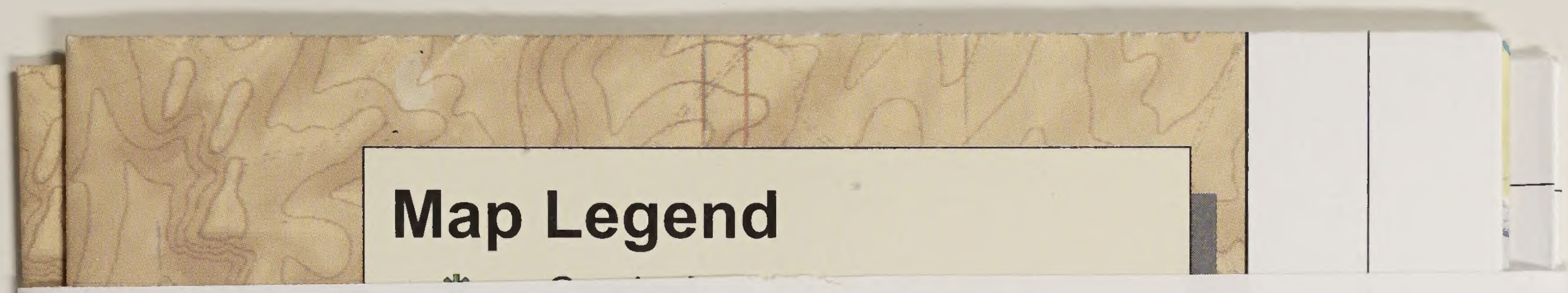
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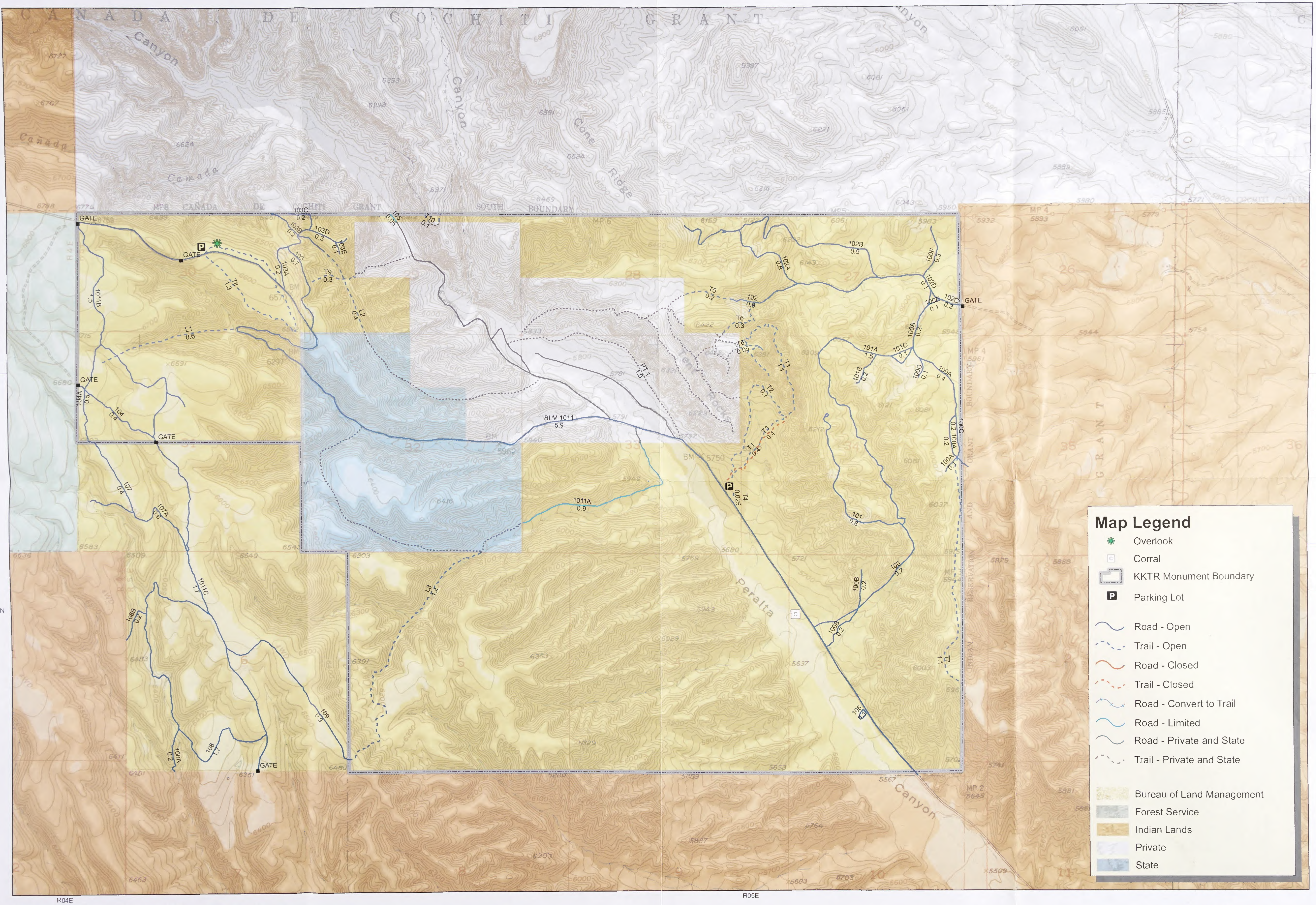

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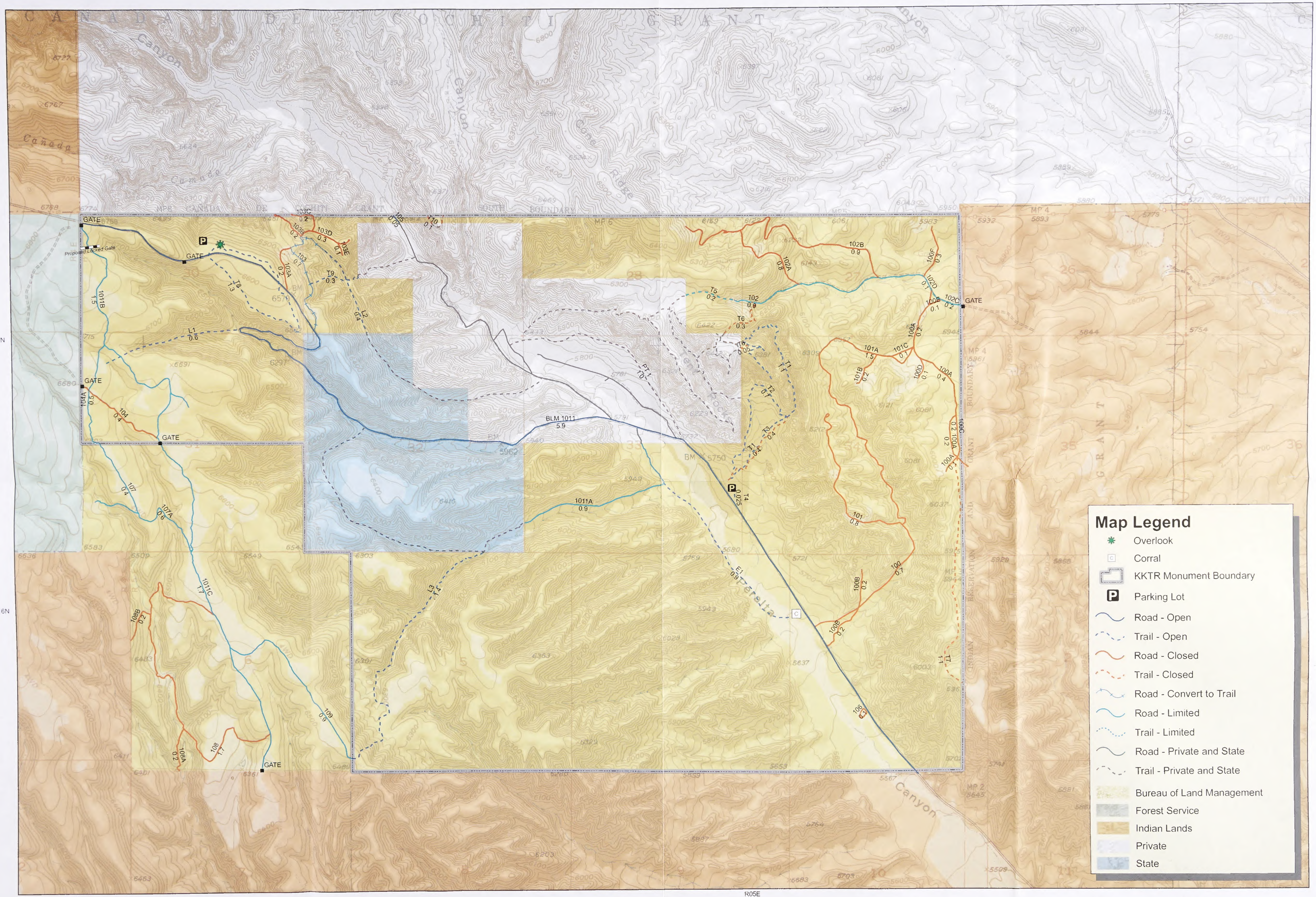
Projection: UTM Zone 13
Datum: NAD 1983

Map 6
Roads and Trails Under Alternative A

May 30, 2006



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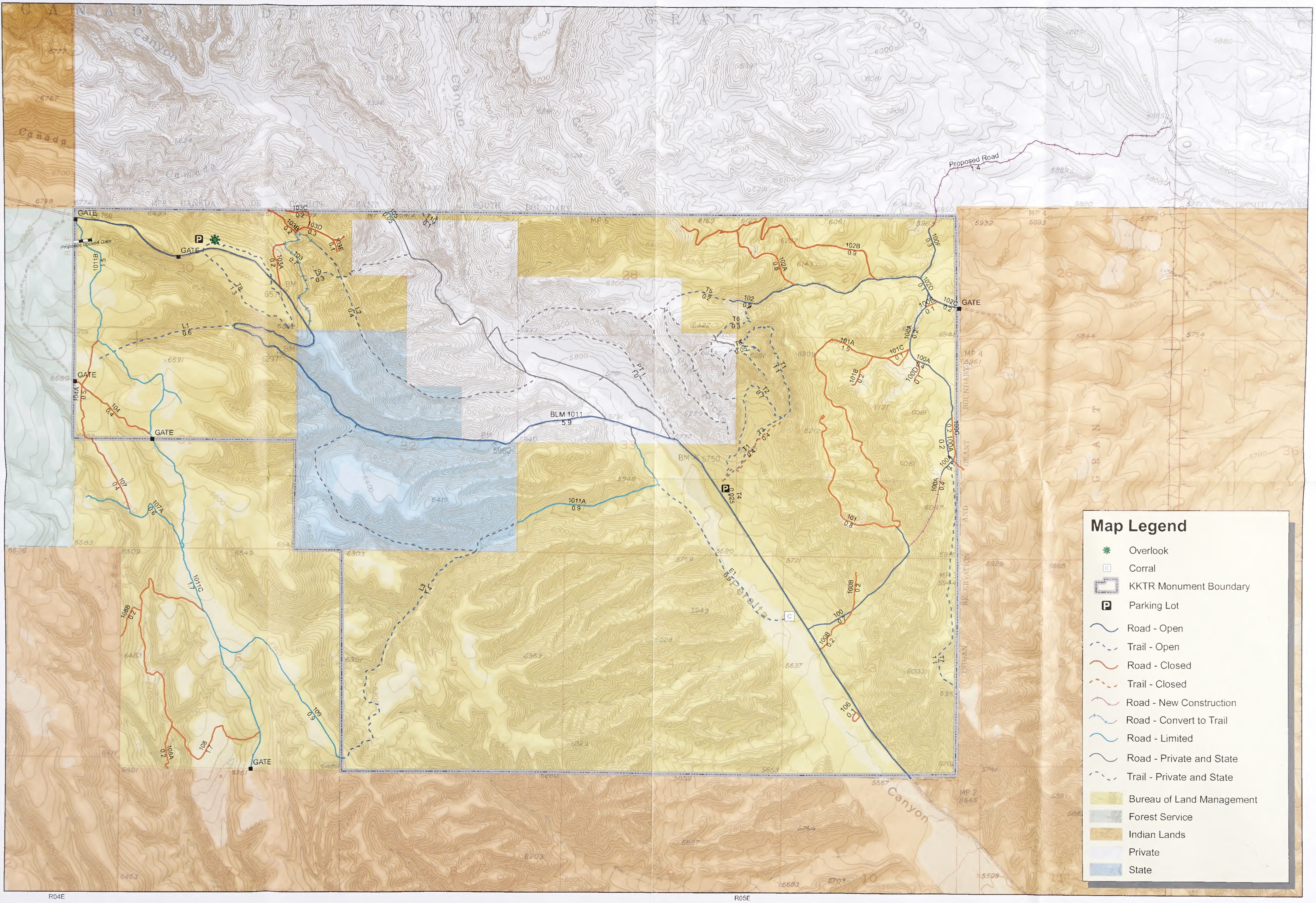
Projection: UTM Zone 13
Datum: NAD 1983

Map 7
Roads and Trails Under Alternative B

June 2, 2006



April 17, 2006

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Projection: UTM Zone 13
Datum: NAD 1983

Map 8
Roads and Trails Under Alternative C

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Bureau of Land Management
Albuquerque District
Rio Puerco Field Office
435 Montaño N.E.
Albuquerque, New Mexico 87107

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